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THE JOURNAL OF ECONOMIC HISTORY

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Arthur Young and the Society of Arts[1]

I

FOR many years Arthur Young (1741-1820), greatest of all English agricultural publicists, was closely associated with the Society for the Encouragement of Arts, Manufactures, and Commerce, established in London in March 1754. Each year the Society of Arts, as it soon came to be called, offered premiums for desirable inventions and improvements in such diverse fields as agriculture, manufactures, chemistry, colonies and trade, and the polite arts.[2] In his numerous books Young frequently commented on the activities of the Society, while the eight volumes of Young manuscript letters in the British Museum contain scattered references to his relations with the Society.[3] A large portion of this article is based, however, upon the manuscript records of the Society of Arts, which I was permitted to examine and use through the courtesy of Mr. Charles Durant Cassidy, librarian and examinations officer, and Dr. Frank R. Lewis, assistant secretary. These records consist of minutes, letters, unpublished transactions, and especially records of the various committees which examined all applications for premiums and made the awards. Among the records are

[1] It seems fitting that the two hundredth anniversary of Young's birth should not pass without some commemorative attention. It had been my hope to publish a biography of him this year but that work is still far from completion.

[2] Cf. Sir Henry T. Wood, *A History of the Royal Society of Arts* (London, 1913), a semi-official account. Much material on the early history of the Society may also be found in R. Dossie, *Memoirs of Agriculture and other Oeconomical Arts* (3 vols., London, 1768, 1771, 1782), which contains lists of premiums, a brief history of the Society, and the details of many projects for which premiums were given. Dossie's work was given official sanction by the Society and served in place of regular *Transactions* which did not appear until 1783. There is an admirable brief account of the work of the Society of Arts in W. Bowden, *Industrial Society in England towards the End of the Eighteenth Century* (New York, 1925), 38-44.

[3] *British Museum Additional Manuscripts* 35, 126-135, 133. These volumes contain chiefly letters to Young. Nearly everything of interest for this article is in *Mss.* 35, 126.

eight unpublished manuscript letters written by Young, two of which are reproduced as an appendix to this article.

Arthur Young did not become a member of the Society of Arts until 1769, but his associations with the Society began nearly five years previously. His agricultural career commenced in 1763 when he rented about three hundred acres on his mother's estate at Bradfield Combust in Suffolk.[4] "I had no more idea of farming than of physic or divinity,"[5] wrote Young many years later; nevertheless, during the four years from 1763 to 1767, while he was at Bradfield, Young started on the two closely related courses that made him the most famous agriculturalist of his day. He embarked upon two thousand experiments which extended to nearly every branch of agriculture.[6] Two of them, one in 1765 and the second in 1767, were for the Society's premium of £5 for any one who should cultivate an acre of madder according to certain specifications. For both experiments Young received the premium,[7] although both resulted in financial loss, even after deducting the value of the premium. For the first he estimated a net loss of £16; for the second of only £2.[8] Young was frequently a failure as a practical farmer; his never-ending experiments were not always remunerative.

Young began to write upon agriculture almost as soon as he began to practise it. Indeed his mania for writing had resulted in two anonymous pamphlets before he was twenty years old.[9] His first agricultural writings appeared in eleven short articles in the *Museum Rusticum et Commerciale* in 1764 and 1765. The sixth of these articles was entitled:

[4] *The Autobiography of Arthur Young,* edited by M. Betham-Edwards (London, 1898), 29, 30. Cf. also "Memoirs of the last thirty years of the Editor's Farming Life" in *Annals of Agriculture,* 1791, XV, 154, 155. On his mother's death in 1785 the estate at Bradfield passed into Arthur Young's hands.

[5] *Autobiography,* 29.

[6] The account of these experiments is found in A. Young, *A Course of Experimental Agriculture,* 4 vols. in 2 (London, 1770). Many of the experiments were badly executed and his methods of accounting were severely criticized. In the encyclopedic manuscript which he left at his death, *The Elements of Agriculture,* which has never been published, Young confessed, ". . . it is not without the deepest regret, that I reflect on some of those works, in which I hazarded what I was pleased to call experiments, by which I deceived both myself and others." *Add. Mss.* 34, 859, f. 406.

[7] *Society of Arts, Committee Report Books,* 1764-1765, f. 36, 1766-1767, f. 9. Cf. also Dossie, I, 9, 13. Later in the same volume (40-46), Dossie points out that the encouragement given to the cultivation of madder was aimed less at a profitable crop for the farmer than at making the English manufacturer independent of the high prices and uncertain quality of imported Dutch madder.

[8] *Course of Experimental Agriculture,* IV, 253-265.

[9] *The Theatre of the Present War in North America: With Candid Reflections on the great Importance of the War in that part of the World* (London, 1758); *Reflections on the Present State of Affairs at Home and Abroad* (London, 1759).

"Of the usefulness of acquiring a knowledge of foreign practices in husbandry, with some hints towards attaining and propagating that knowledge; particularly recommended to the notice of the Society instituted for the Encouragement of Arts, Manufactures, and Commerce."[10] It was dated from Bradfield, December 2, 1764, and was signed "Y." In this article Young pointed out the gains that might accrue to English agriculture if a properly equipped traveler should go throughout Europe and observe the agricultural practices which prevailed in the different countries. He outlined a complete tour of nearly all Europe and set up difficult qualifications for his ideal traveler, who must be a practising farmer with more than a book knowledge of agriculture, versed in the chief European languages, able to sketch the various implements and improvements that he saw, and possessed of ample means. Since men of wealth were not likely to have the other qualifications, Young concluded the essay with an appeal to the "munificent public spirit" of the Society of Arts to subsidize the scheme and to select the man to carry it out.[11] The essay is particularly interesting because it foreshadows Young's own later agricultural tours through England, Ireland, and France.

In 1767 Young published his first really important agricultural work, *The Farmer's Letters,* a little duodecimo volume, the first three quarters of which was new material, while the last quarter, entitled *Sylvae,* was a reprint of his articles in the *Museum Rusticum.* Letter VI in this volume[12] is devoted to an analysis of the agricultural premiums that the Society of Arts had offered for the year 1766, and to some suggestions how the aims of the Society might be more effectually pursued. In the first part of the letter Young discussed in succession the various premiums that had been offered—for the culture of lucerne, carrots, parsnips, parsley, burnet, grass seeds, madder, turnip cabbages, and boorcole; for the collection of beeswax without destroying the bees; for the comparative culture of various crops according to the drill and broadcast methods; and for the invention of a drain plough and a machine for slicing turnips. Although Young praised the Society for offering premiums in each of these fields, he was critical in some cases

[10] *Museum Rusticum et Commerciale: Or, Select Papers on Agriculture, Commerce, Arts and Manufactures,* IV, No. 8, 58-65. This article was reprinted, as part of the *Sylvae,* in A. Young, *The Farmer's Letters to the People of England . . . , to which are added Sylvae: or Occasional Tracts on Husbandry and Rural Oeconomics* (3d ed., Dublin, 1768), 456-479.

[11] *Museum Rusticum,* IV, 65.

[12] *The Farmer's Letters,* 211-253.

of the terms under which the premiums were offered. He assumed that the ultimate aim of the Society in offering most of these premiums was to expand the cultivation of a certain crop. The common farmer would be unwilling to make an experiment, however, unless he could be reasonably sure that the value of the premium would cover the loss that he might incur. The best form in which to offer the premiums was therefore a certain fixed sum for every acre planted. He regarded a premium of £20 for the greatest number of acres (not less than ten) of drilled lucerne as too small for such an uncertain chance. The lucerne might not prove profitable and the experimenter might not get the premium.[13] He was especially critical of the £10 premium for raising various types of grass seed which must be "gathered clean by hand, separately sown in drills, and kept clean from all mixture of other grasses and weeds." ". . . if they have anywhere fallen short in proportioning their premiums to the difficulty of the work," Young wrote, "it is here."[14]

In the latter part of the letter Young offered certain suggestions for making the work of the Society more effectual. He proposed that the Society should subsidize some well-chosen farmers to perform specific experiments which would more or less settle a number of disputed points. He detailed ten experiments as examples.[15] In one he suggested that madder be cultivated in three different kinds of soil—light, medium, heavy—to determine which was best. In another he urged that lucerne be planted in five-acre fields according to three methods—transplanting, drilling, and broadcast—and that accurate accounts be kept of the products over a ten-year period. In several proposed experiments he suggested that various crop rotations be tried over a twelve-year period. In still another, the relative value of oxen and horses as draught animals was to be tested.

Young pointed out that the most important defect in the work of the Society was the lack of a suitable publication to spread more widely the knowledge submitted to the Society. "Premiums undoubtedly are of great benefit, when properly bestowed;" he wrote, "but I may venture to say they are not attended with a tenth part of their good effects, unless the results of them are published."[16] Again and again in later years Young came back to this point. That the Society itself recognized the lack is clearly shown by the fact that it encouraged Robert Dossie

[13] *Ibid.*, 215. Lucerne was the name used in the eighteenth century for alfalfa.
[14] *Ibid.*, 221.
[15] *Ibid.*, 233-244.
[16] *Ibid.*, 244.

to publish his *Memoirs of Agriculture*. Dossie himself, moreover, signalized the need for an official publication just as forcibly as Young: "But vain are all these labours to cultivate experimental research, or collect information, if a proper channel be wanting to transmit the product of them to the public. . . ."[17] In spite of the exhortations of Young and Dossie, the Society did not publish any *Transactions* until 1783.

II

Arthur Young's close association with the Society of Arts began in 1769 when he was elected to membership. In 1767 he had moved from Bradfield to Sampford Hall in the northwestern part of Essex. The farm he took there was too large for his scanty resources, and early in 1768 he moved again to Bradmore Farm at North Mims, Hertfordshire, seventeen miles north of London. The nine years which Young spent at North Mims were very important ones in his career, even though his farming was still a failure financially and he was in constant financial embarrassment. His *Autobiography* for 1770 begins:

> What a year of incessant activity, composition, anxiety and wretchedness, was this! No carthorse ever laboured as I did at this period, spending like an idiot, always in debt, in spite of what I earned with the sweat of my brow and almost my heart's blood, such was my anxiety: yet all was clearly vexation of spirit.[18]

In an effort to meet his creditors he published in this period alone ten books, amounting altogether to twenty volumes and five pamphlets. Much of his literary work was mediocre, or worse, and it received severe treatment in the reviews. Nevertheless, the very number of books that he wrote was bound to make him a national figure, and not all of his writings were poor. Indeed some of his most valuable and popular books were published in this period: the three English tours, the *Farmer's Kalendar,* and the *Political Arithmetic.*

In 1768 the Society of Arts offered a premium of £20 or a gold medal for the "best account of a Method of Rearing and Fattening Hogs, verified by Experiments."[19] In response Arthur Young sent in nineteen experiments for which he was eventually awarded the honorary gold medal which he chose in preference to the £20 in spite of his desperate financial

[17] Dossie, I, xi.
[18] *Autobiography,* 52, 53.
[19] Dossie, II, 201.

condition.[20] It was the custom to withhold the candidate's name until the Committee had made its decision. In this case Young's essay came before the Committee on Agriculture on February 13, 1769,[21] and apparently received instant approbation. When the Committee opened the paper containing the candidate's name, however, they found a note in which Young requested the privilege of publishing himself the account of his experiments along with others which he had not submitted. Since the Society reserved rights of publication for itself, the Committee postponed final decision. Several letters passed between Young and the Society and the subject was discussed by the Committee on February 20 and February 27.[22] Young's argument for publishing his experiments himself rested upon the fact that the Society published no genuine "Transactions." On February 27 the Agricultural Committee decided that his experiments had been "conducted with great ingenuity and application" and entitled him to the premium.[23] Eventually he was also given permission to publish his own experiments and consequently his *Essay on the Management of Hogs* appeared later in 1769.[24]

In two of the letters which Young wrote to the Society early in 1769, he had shown considerable interest in the Society's work. On February 15 he offered to experiment with various grass seeds if the Society could furnish them to him; he promised also to send the Society a section of a hollow drain which he was making; he suggested that a premium might be offered for "a system of three ploughs moving after each other to cut such drains."[25] In a second letter he made an "obliging offer . . . of the use of land for Trials of Ploughs or Experiments in Husbandry."[26] It was only natural that a man who had exhibited such friendly interest should be elected to membership in the Society. His name was therefore proposed on May 10 and he was elected a week later.[27] One of his sponsors was John Arbuthnot,[28] a gentleman farmer at Mitcham in Surrey.

[20] *Society of Arts, Minute Books,* XIV, f. 53. There is a picture of the medals given by the Society in Wood, *History of Society of Arts,* opposite p. 314.

[21] *Committee Reports,* 1768-1769, ffs. 30, 31.

[22] *Ibid.,* ffs. 32, 35; *Minute Books,* XIV, f. 53.

[23] *Committee Reports,* 1768-1769, f. 35.

[24] The published essay included several other experiments besides those for which Young had been awarded the premium. On October 11, 1769, the Society voted thanks to Young for a copy of his *Essay on Hogs* (cf. *Minute Books,* XV, f. 3). The original essay with some additions is also reprinted in Dossie, II, 201-229. Apparently in some way or other part of Young's essay was also printed "surreptiously" in some periodical publication (cf. Dossie, II, 201).

[25] *Society of Arts, Guard Book A—1760-1779.*

[26] *Minute Books,* XIV, f. 53.

[27] *Ibid.,* XIV, ff. 74, 75.

[28] *Ibid.,* XIV, f. 75.

The two men became close friends and Young has left in his *Autobiography* a striking tribute to Arbuthnot: "By far the most agreeable friend I was ever connected with."[29] Five days after his election Young attended a meeting of the Agricultural Committee,[30] and is recorded as being present at two other committee meetings that year, on May 31 and December 12.[31]

At about the same time that Young had submitted his essay on hogs he had sent in a second essay for a prize "for the best account of the manner of cultivating Coleseed for the feeding of Cattle and Sheep. . . ." On May 1, 1769, the Committee on Agriculture examined the essay and voted that it was "not deserving of the Premium. . . ."[32] On May 24, a week after Young had been elected to membership, the Society requested the Committee to reconsider its action. On June 5 the Committee completely reversed its decision and voted that "the account of the experiments is extremely accurate and fully complying with the terms of the advertisement, and the candidate is consequently entitled to the proposed premium of a Gold Medal."[33] This vote was reaffirmed by the Committee after the summer recess on December 4[34] and finally on December 18 they opened the paper which came with the essay and found that the author was Arthur Young![35] The whole transaction seems rather peculiar, to say the least. Probably the reason why the essay was rejected in the first

[29] *Autobiography*, p. 99. I have been unable to find out much about John Arbuthnot. Miss Betham-Edwards, in the *Autobiography* (footnote, p. 66), believes him to have been a member of the family of the Viscounts Arbuthnot. There are many references to him in the *Autobiography* and several manuscript letters from him in the *British Museum Add. Mss.* 35, 126. These letters in vile handwriting exhibit a strong sense of humor and a warm friendship for Young. In his *Farmer's Tour through the East of England* (4 vols., London, 1771), II, 251-560, Young gives an exhaustive account of Arbuthnot's agricultural experiments. When Young submitted the proof to Arbuthnot, the latter replied, ". . . but my Good man, surely you spin me out too long, but you best know, don't think me impertinent, but will people have the patience to go through such scenes of damned bad husbandry—many of the courses are so infernal bad. I must beg you to give the reasons which obliged me to pursue them or I fear not much credit will be given to your attentive cultivator as you call him." (*Add. Mss.* 35, 126, ffs. 105-106.) Arbuthnot was notable especially for his successful cultivation of madder and his invention of agricultural implements. Later Arbuthnot received an appointment through Lord Loughborough to the Irish Linen Board, but he lived only a few years after going to Ireland (*Autobiography*, 98-99).

[30] *Committee Reports*, 1768-1769, f. 44.

[31] *Ibid.*, 1768-1769, f. 46, 1769-1770, f. 12.

[32] *Ibid.*, 1768-1769, f. 42.

[33] *Ibid.*, f. 48.

[34] *Ibid.*, 1769-1770, f. 11.

[35] *Ibid.*, f. 15. It is possible that Young may have confused rape with coleseed. There is an article in Dossie, II, 91-128, in which he says that the confusion was common, and claims that even the Society had "been led, through ignorance, or some blunder, into a mistake with respect to this point."

place was that Young came to the conclusion that coleseed was *not* a profitable crop for feeding cattle and sheep. Very seldom did the Society overrule a Committee, but in this case the Society took action just a week after Young had been elected a member. To say that the name of the candidate was not known until much later is entirely unconvincing, for it must be remembered that the essays were in manuscript form, and Young's handwriting was highly individual. The *Essay on Coleseed* was published as an appendix to a second edition in 1770 of the *Essay on Hogs.*

In 1769 Young also published one of his worst pieces of hack work, *Letters concerning the Present State of the French Nation.* Although Young had never been to France, he discussed all aspects of French life, from agriculture and industry to military power and the fine arts. Throughout the volume he made comparisons with England. In the last chapter, which is devoted to "Academies, Universities, and Societies," Young paid eloquent tribute to the work of the Society of Arts with only one qualification:

> This one society is a balance, to all that France can boast. One circumstance, however, which diminished its utility considerably, must not be forgot, no transactions or memoirs of it are published, a failing of very bad consequences, for their country at large is entirely ignorant of the success of their premiums. . . . Was this objection removed, none in the world, in any respect, would be comparable to it.[36]

During the year 1770 Young did not attend the meetings of the Society very regularly. He was present only on January 22,[37] and on May 24 at Kennington at the trial of the Triple Horse Hoe, invented by John Reynolds of Addisham, Kent.[38] Late in the year he sent a copy of *A Course of Experimental Agriculture* to the Society.[39] There is also one short letter from Young to the Society dated November 20, 1770, in

[36] A. Young, *Letters concerning the Present State of the French Nation, with a complete comparison between France and Great Britain* (London, 1769), 457.

[37] *Committee Reports,* 1769-1770, f. 23.

[38] *Ibid.,* f. 62. There is a fairly long account of Reynolds's agriculture in the *Farmer's Tour,* III, 60-85. Reynolds was noted especially for his introduction of the turnip rooted cabbage. Dossie prints two articles by Reynolds on the cultivation of the turnip rooted cabbage (I, 421-442; II, 41-53), and another article by him on a method of brining corn to prevent smut (II, 129-139). Young said that Reynolds was "active and spirited and richly deserves to be had in esteem by all the lovers of good husbandry" (*Farmer's Tour,* III, 85). Although the Committee Reports state that the Committee was not satisfied with the Triple Horse Hoe, Young speaks quite favorably of it and inserts a plate of it (*Farmer's Tour,* III, plate 22, figure 3, opposite p. 83).

[39] *Minute Books,* XVI, f. 36.

which he reported very unfavorably on the use of a composition for marking sheep which had been furnished him by the Society.[40]

On January 2, 1771, the Society distributed forty bushels of spring wheat among those members who were willing to experiment with it. Arthur Young received a parcel; so did Lord Romney, John Arbuthnot, Robert Dossie, John Wynn Baker, Thomas B. Bayley, and Dr. Benjamin Franklin.[41]

On March 6, 1771, Young wrote to the Society recommending a swing plough which had been made by his friend, John Brand, a blacksmith, and offering to procure one of these ploughs for the inspection of the Society.[42] Young gives a longer account of John Brand in the *Farmer's Tour through the East of England* which appeared in 1771. He said that he had used Brand's tools for nearly seven years, and praised his swing plough, "which much exceeds any plough I have yet seen, in cutting a true, regular furrow . . . or in turning over grass land; at the same time, that in strength and duration it is far preferable to all."[43] The account closed, "I cannot but recommend this very ingenious mechanic to the attention of the public;—he has abilities far superior to the obscurity in which he lives."[44] A week later, on March 13, the letter was duly referred to the Committee on Agriculture.[45] For some reason, however, no action seems to have been taken on Brand's plough until 1773. In the *Annals of Agriculture* Young gives a detailed account of a trial of ploughs.[46] No date is given, but it may well have been on May 24, 1773, when a meeting was held at Morden where several trials of ploughs were conducted.[47]

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[40] *Society of Arts, Letters Received,* 1770-1773, f. 20.

[41] *Society of Arts, Transactions,* 1770-1771. Lord Romney was the president of the Society of Arts, 1761-1793. John Wynn Baker (d. 1775) was a prominent agriculturist who conducted an experimental farm in the service of the Royal Dublin Society, and was on friendly terms with Young who greatly admired him. There are several references in Young's works to Baker's experiments. Cf. *A Course of Experimental Agriculture,* I, xvi; *A Tour in Ireland: with General Observations on the Present State of that Kingdom . . .* (2 vols., Dublin, 1780), I, 20-21; *Annals of Agriculture,* I, 89-108. Thomas Butterworth Bayley (1744-1802) was an active prison and sanitary reformer and one of the leading spirits of the Lancashire Agricultural Society. There are several letters from him in the Young manuscripts in the British Museum, and some account of his agriculture in *A Six Months' Tour through the North of England* (4 vols., London, 1771), III, 194-211. Benjamin Franklin had become a corresponding member of the Society in 1756, an ordinary member later, and in 1761 he had accepted the chairmanship of the Committee on Colonies and Trade. Cf. Frank R. Lewis, "Benjamin Franklin and the Society of Arts," in *Pennsylvania History,* VI, 14-19.

[42] *Letters Received,* 1770-1773, f. 93.

[43] *Farmer's Tour,* II, 212.

[44] *Ibid.,* 213.

[45] *Minute Books,* XVI, ff. 76, 77.

[46] *Annals of Agriculture,* I, 113-119.

[47] *Committee Reports,* 1772-1773, ffs. 40, 42.

The ploughs were tested by a clocklike machine "for measuring the force exerted by horses in drawing" which had been invented by Samuel More, secretary to the Society.[48] Among the ploughs tested were the famous Rotherham plough, the equally famous trenching plough which had been invented by Mr. Ducket of Petersham, two ploughs invented by Arbuthnot, and Mr. Brand's iron swing plough.[49] As a result of these trials, the Committee decided that "Mr. Brand's plough was an improvement, and merited a bounty." Eventually the Society bought Brand's plough, placed it in their repository for machines, and gave him a premium of £20.[50] Young had succeeded in befriending the humble blacksmith!

III

In his *Autobiography* Young claimed that he "attended very much the meetings" of the Society of Arts in 1772 and also the Committee on Agriculture, "of which I was chairman."[51] Young's memory was frequently faulty and certainly so in this case. He was not elected chairman of the Committee on Agriculture until late in 1773, and the records show that he only attended one meeting of the Committee that spring, on May 1, at a trial of ploughs for cutting water furrows at Mr. Alexander Fordyce's farm at Roehampton, at which Arbuthnot and Dossie were

[48] *Annals of Agriculture,* I, 113. More was secretary from 1769 to 1799. His machine was given a premium in 1772. Cf. *Transactions of the Society . . . for the Encouragement of Arts, Manufactures, and Commerce,* 1783, I, 312.

[49] The Rotherham plough was one of the most famous improved ploughs of the eighteenth century and was popular in the Midlands. Cf. M. E. Seebohm, *The Evolution of the English Farm* (Cambridge, Mass., 1927), 302, and Lord Ernle (R. E. Prothero) *English Farming, Past and Present* (London, 1912), 202, 208. Mr. Ducket had a large farm at this time at Petersham, Surrey, and later at Esher. He was also George III's bailiff at Windsor. His trenching plough was one of the implements preserved in the Repository of the Society. Cf. Dossie, II, 330. Young gave accounts of Ducket's improvements in the *Farmer's Tour,* II, 242-247, the *Annals of Agriculture,* X, 186-198, and XVII, 161-167, and in a much later pamphlet, *On the Husbandry of Three Celebrated British Farmers, Messrs. Bakewell, Arbuthnot, and Ducket* (London, 1811). There are also two articles on Ducket's "mode of cultivation" by no less a personage than George III, writing in the *Annals of Agriculture* under the pseudonym, Mr. Ralph Robinson (VII, 65-71, 332-336). There are plates and descriptions of several of Arbuthnot's ploughs in the *Farmer's Tour,* II, 498-560.

[50] *Annals of Agriculture,* I, 117. Cf. also Dossie, III, 453, and *Transactions of the Society,* I, 312. There is no indication in the account in the *Annals* that Young was dissatisfied with the results of these trials, but the following note from the appendix of the *Farmer's Tour,* IV, 476-477, gives quite a different impression: "I have been present at some of these committee trials, and am clearly of opinion, that not one in ten is worth a groat; for what analogy is there between the trial of an instrument in turning a furrow or two or performing any other operations by a stop watch, and the usual execution during a common day's work?"

[51] *Autobiography,* 59.

also present.[52] He attended the Committee on Mechanics, however, twice that year, on April 2 and April 23.[53]

It was because Young felt himself unable to attend the committee meetings regularly that he wrote two lengthy letters to the Society in January 1772. The first, dated January 12, describes in great detail his experiments on Siberian barley and on spring wheat, the seeds of which had been given him by the Society. In both trials he came to the conclusion that the common varieties produced a superior crop.[54] The letter concludes with a further account of his dissatisfaction with the composition for marking sheep which had been furnished by the Society.

The second, and very much more important, letter was dated January 23.[55] It proposed to the Society a series of premiums for experiments to determine the value of carrots, cabbages, turnips, and potatoes as cattle food. He declared that it had already been clearly demonstrated that large crops of these vegetables could be raised. To make their use more general, however, it must also be proved that they were profitable. Repeatedly in his various writings Young emphasized the profit motive as most important.[56] It is certainly no exaggeration to say that he was a firm believer in capitalistic agriculture. He therefore proposed premiums for the invention of three machines, one a device for weighing cattle alive, a second for "the best, cheapest and simplest machine to facilitate the operation of washing carrots," and the third for a drill plough for carrots. The minutes of the Committee on Agriculture and the *Transactions* for 1772 show that his suggestions were adopted substantially.[57]

There are three letters in the Young manuscripts in the British Museum for 1772 to Young from Thomas Butterworth Bayley who lived

[52] *Committee Reports,* 1771-1772, f. 31. Alexander Fordyce was the banking member of this famous family, and had a fine estate at Roehampton. He was in serious financial difficulties in this year, and soon afterwards absconded. His firm suspended payment on June 10, 1772.

[53] *Committee Reports,* 1771-1772, ffs. 31, 37. On April 2, Young visited his friends and relations, the Burneys, after the meeting of the Committee on Mechanics, and the novelist, Fanny Burney, recorded in her diary, "Mr. Young dined with Sue and me today. Fortune, I hope, smiles on him again, for he again smiles on the world." Cf. *The Early Diary of Fanny Burney* (London, 1889), I, 157.

[54] *Transactions,* 1771-1772. This letter is printed in Dossie, III, 26-29. Dossie also printed several other letters on the Siberian barley. Most of the accounts, several by competent farmers, were enthusiastic, and Young's was the only one which was strongly critical.

[55] *Transactions,* 1771-1772. This letter is reproduced below as Letter I.

[56] Cf. for example, *A Course of Experimental Agriculture,* I, 34, 35, *Annals of Agriculture,* XVI, 595, 596, and *The Farmer's Guide in Hiring and Stocking Farms* (2 vols., London, 1770), I, pp. vi, vii, 21, 342, 343; II, 37, 268, 269.

[57] *Committee Reports,* 1771-1772, f. 18; *Transactions,* 1771-1772.

at Hope near Manchester.[58] In all three, Bayley recorded his dissatisfaction with the work of the Society of Arts, particularly because it published no regular "Transactions." Its lists of premiums, he asserted, had little circulation outside of the environs of London. He urged that Young should exert his influence to try to remedy this situation. In his letter of April 3, Bayley wrote:

> I am still much dissatisfied with the conduct of the Society of Arts & about their not publishing their Papers in a proper manner—. . . . Our Society is too fond of Pictures, Building, & fat Soles & fresh Lobsters; I am quite a *malcontent;* Be so kind as to give me your Sentiments in full on this subject, & what your most intelligent friend Mr. Arbuthnot thinks of these matters.[59]

During the spring months of 1773 Young was a regular attendant at the Agricultural Committee meetings, being present twice in March, once in April, three times in May, and once in June.[60] The reason why he attended more frequently than formerly may be discovered in the fact that in 1773 he became the parliamentary reporter for the *Morning Post,* a position which he retained until 1776 when he went to Ireland. These were the years when he was most active in the affairs of the Society. Every Saturday he walked the seventeen miles from London to Bradmore Farm and returned on Monday morning. Such a position was of course bad for his farming, but Young was desperately in need of money and he received five guineas a week for his reporting.[61] Incidentally it became possible for him to attend the meetings of the Agricultural Committee more regularly, at least when Parliament was in session.

Young was not present at the meeting of the Agricultural Committee on March 1, 1773, but the secretary of the Society reported that he had offered to provide the Committee with one hundred bushels of clustered potatoes at three shillings a bushel.[62] The offer was accepted and at the next meeting on March 8, when Young was present, the members of the Committee each took for experimental purposes a bushel among them Robert Dossie, Jean Hyacinthe de Magellan, Robert and John Adam, the famous architects, John Arbuthnot, Colonel St. Leger, Dr. Fordyce, and

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[58] *Add. Mss.* 35, 126, ffs. 119-121, 138-141, 142.
[59] *Ibid.,* f. 142.
[60] *Committee Reports,* 1772-1773, ffs. 29, 32, 34, 35, 38, 40, 42, 45.
[61] *Autobiography,* 63.
[62] *Committee Reports,* 1772-1773, f. 28. These potatoes were also known as the Howard potatoes, because they had been introduced by the famous prison reformer, John Howard. Young had met Howard in 1772. Cf. *Autobiography,* 59, 60.

Dr. Watson.[63] In the Minute Books of the Society it was noted on October 13, 1773, that a letter had been received from Young on sheep marking, but this letter has not survived.[64] On December 9, the secretary of the Society, Samuel More, wrote a note to Young informing him that he had been elected one of the two chairmen of the Agricultural Committee.[65]

IV

Young served as chairman of the Committee on Agriculture for the first time on January 10, 1774.[66] During January and February he was present frequently and acted as chairman at three meetings.[67] He was also present at another trial of ploughs held at the "Sign of the Plough" at Stockwell.[68] On November 8 he wrote to the Society accepting the chairmanship for the following year and reporting on his experiments with some gypsum which had been furnished him by the Society for trial as a fertilizer.[69] He had tried it on three different soils but in no case could he see that any benefit had been derived from its use. He was hesitant to declare it worthless when so many found it valuable and he admitted that he might have erred in some detail of its use. Nevertheless he remained dubious as to its value in comparison with well-tested fertilizers.

In 1774 Young published one of his most valuable books, *Political Arithmetic,* in which he again paid tribute to "the spirited endeavours of this excellent society."[70] Nevertheless he criticized the policy of devoting

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[63] *Committee Reports,* 1772-1773, f. 29. Magellan (1723-1790) was a Portuguese scientist who came to England about 1764 and was active in the Royal Society. He and Young were on friendly terms. The Adam brothers were the architects for the building in the Adelphi to which the Society of Arts moved in 1774. Colonel Anthony St. Leger of Park Hill, near Bawtry, Yorkshire, was M.P. for Grimsby. There is an extended notice of his agricultural experiments in the *Farmer's Tour,* I, 257-296. William Fordyce (1724-1792) was the brother of the financier and one of the most noted physicians of his day. Dr. Richard Watson (1737-1816) was successively professor of chemistry and divinity at Cambridge, and later Bishop of Llandaff. Young knew Watson fairly well. He was one of the most notorious pluralists of the eighteenth century and spent most of his time while bishop at his farm in the Lake District.

[64] *Minute Books,* XVIII, f. 2.

[65] *Add. Mss.* 35, 126, f. 161.

[66] *Committee Reports,* 1773-1774, f. 10.

[67] *Ibid.,* ffs. 10, 17, 25, 28.

[68] *Ibid.,* f. 46.

[69] *Transactions,* 1774-1775. This letter is reproduced below as Letter II.

[70] A. Young, *Political Arithmetic, Containing Observations on the Present State of Great Britain; and the Principles of her Policy in the Encouragement of Agriculture* (London, 1774), 173.

too much attention to the minutiae of agriculture and too little to larger objects such as improvement of waste lands,[71] one of Young's pet enthusiasms to which he returned in nearly every one of his writings. He also complained that there was no more valuable premium for gentlemen and members of the Society than the gold medal, which was good enough for the man "who fats hogs, plants coleseed, drills turnips, and horse hoes wheat."[72] But for such a larger project as the reclaiming of waste lands the Society should offer an ornamental model of a plough or a silver or gold cup.

> A man would place such a thing in a glass case, and set it where it might be seen: but a medal, unless a hole is drilled through it, and you wear it pendant from a button hole, is seen by no one—a man must be put to the blush to bring out his medal and shew it. . . . In a word, vanity is very prevalent in this age, and I see no reason why we should not render the passions of mankind subservient to the good of agriculture.[73]

During 1775 Young was more regular in his attendance at the meetings of the Agricultural Committee than during any other single year. He was present at thirteen committee meetings, over six of which he presided.[74] Unfortunately the minutes give no details as to the debate and it is impossible to tell just what part he played. The business was routine for the most part. On January 9 he received for experiment a specimen of a rhubarb plant and on March 13 some cabbage seeds.[75] On April 29 he presided over a trial of ploughs at Stockwell.[76] On May 25 he served as chairman of the Committee on Mechanics, an interesting point because it shows that a chairman of one committee could serve for another committee if necessary. On December 4 he was chairman of the Agricultural Committee, but since no quorum was present the meeting had to be adjourned.[77]

Young attended the meetings of the Agricultural Committee only twice in the spring of 1776, on February 5 and March 18.[78] On the latter date he was in the chair. Perhaps the reason why he attended less fre-

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[71] *Ibid.*, 171-173.

[72] *Ibid.*, 173. It should be remembered that Young had received the gold medal for two of the above mentioned projects.

[73] *Ibid.*, 173.

[74] *Committee Reports*, 1774-1775, ffs. 19, 28, 32, 35, 38, 42, 45, 46, 52, 54; 1775-1776, ffs. 1, 3, 6, 8.

[75] *Ibid.*, 1774-1775, ffs. 19, 46.

[76] *Ibid.*, f. 52.

[77] *Ibid.*, 1775-1776, f. 8.

[78] *Ibid.*, ffs. 14, 23.

quently was that he was too busy in preparing for his Irish trip. He left his home on June 10,[79] was in Ireland all summer and early autumn and arrived back in England on October 22.[80] Shortly after his return, on November 13, he attended a general meeting of the Society where he and his friend Arbuthnot were elected co-chairmen of the Committee on Agriculture.[81]

Young completed his service as chairman of the Committee on Agriculture in the spring of 1777 at meetings held on February 10, 17, and 24, on March 24, and on April 5.[82] On the last named date the meeting was held at the George at Morden where a trial was made of harnessing oxen in the Roman yoke for which a gold medal was awarded to James Black.[83] At the same meeting the Committee declared that a machine for washing potatoes was unsatisfactory. Young's most active participation in the work of the Society of Arts was terminated in 1777 by his acceptance of a position in Ireland as the land agent of Lord Kingsborough.[84] He gave up his farm at North Mims and moved to Ireland in the summer of 1777. He remained there less than a year. When he returned to England in October 1778, he settled down on the family estate at Bradfield which meant that he was only infrequently in London.[85]

Young's interest in the work of the Society declined only very gradually, however. In December 1779 he was voted the silver medal for his "Treatise on the Culture, Produce, and Application of the Clustered Potato."[86] Eventually the essay was published in the printed *Transactions of the Society* (which at long last began to appear in 1783) where it takes up nearly seventy pages.[87] In his introduction Young said he was includ-

[79] *Annals of Agriculture,* IV, 146. His trip through England to Holyhead is minuted in the *Annals,* IV, 138-190.

[80] *Tour in Ireland,* II, 203.

[81] *Minute Books,* XXII, f. 21.

[82] *Committee Reports,* 1776-1777 ffs. 10, 12, 15, 23, 29.

[83] *Ibid.,* f. 29. There is a paper on the use of the Roman yoke for oxen, with a plate, in the *Transactions of the Society,* II, 81-93.

[84] Robert King, later second Earl of Kingston (1754-1799).

[85] Young's own account of his relations with Lord Kingsborough is found in the *Autobiography,* 76-81. It is all too brief and leaves many questions unanswered.

[86] *Transactions,* 1779-1780 (date of December 20). There is some question whether he received the gold or silver medal for this essay. The manuscript *Transactions,* cited above, say that it was the silver medal. The printed *Transactions of the Society,* II, 6, declare that he received the gold medal, but in III, 30, where the account of the experiments is given, the silver medal is mentioned.

[87] *Transactions of the Society,* III, 30-99. In volume IV of the *Transactions,* pp. 61-106, there is an account of Young's later experiments on the clustered potato, covering the years 1780-1784, when he was at Bradfield.

ing in his essay three points for all of which medals had been offered: the mode of cultivation, the quantity of the produce, and the uses of the potato for feeding cattle.[88] He described in great detail ten experiments which he had conducted, covering a period from 1770 to 1776 when he made his first trip to Ireland. He gave the potatoes large quantities of manure, and used them as a fallow crop to prepare the ground for grain. He found the crops of the clustered potato much larger than the common varieties. Boiling and mashing the potatoes and mixing them with barley meal, he used them most effectively as food for fattening hogs.

In 1780 Young presented his *Tour in Ireland* to the Society, for which the secretary was duly instructed to give thanks and to see that it was preserved in the Society's collection.[89] Late in January and all during February Young was in London visiting Arbuthnot, the Burneys, going to the opera and to parties, attending the Royal Society and Parliament.[90] In the midst of these activities he found time to attend five meetings of the Committee on Agriculture, on January 24, February 7, 13, 21, and 28.[91] At the meeting on February 7 it was arranged that some spelt (German wheat) should be sent to Young for experimentation.[92] More interesting was the meeting on February 13 at which William Marshall proposed that the Society should subsidize him (Marshall) to the extent of £200 annually for six or seven years, to study for a year each the English counties most famous for their agricultural improvements.[93] The proposal was carefully discussed, and many questions were asked. Although the plan itself was commended as a useful one, the Committee declared that it was against its policy to give active aid to such a project. Another motion which proposed that the members individually should give encouragement to the plan was also defeated. Only five members of the Committee were present at this meeting, none of them men of much importance except Young. Did he favor or oppose the plan? There is no way to tell. He should have favored it, for the plan was not very different from the agricultural surveys of the counties, which were carried out by

[88] *Transactions of the Society,* III, 30-31.
[89] *Minute Books,* XXV, f. 101.
[90] *Autobiography,* 92. Young had been elected a Fellow of the Royal Society in 1774. Cf. *Autobiography,* 65.
[91] *Committee Reports,* 1779-1780, ffs. 13, 20, 23, 27, 31.
[92] *Ibid.,* f. 20.
[93] *Ibid.,* f. 23.

the Board of Agriculture when he was secretary.[94] On the other hand, relations between Marshall and Young were never very cordial. Marshall was a very able man but, according to Young, he was "haughty, proud, ill-tempered, snarling."[95] He was critical of Young and probably jealous. An account of the actual debate and the knowledge of how Young voted on Marshall's proposal might well throw much light on Young's character.

It may well have been during his visit to London early in 1780 that Young sat for the portrait painted by James Barry and which was included in the heroic wall paintings for the Society's assembly room.[96] Most of the paintings are allegorical, but one of them is entitled "The Society." Young is shown standing at the extreme left of the picture receiving a medal from the president of the Society, Lord Romney. Nearby are the Prince of Wales and Samuel More, the secretary.

Arthur Young's last recorded attendance at a meeting of the Committee on Agriculture occurred on April 22, 1782, at another of those trials of ploughs and drills at "The Castle" in Stockwell.[97] In January

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[94] The Board of Agriculture was established in 1793-1794. Young was its secretary from the time of its foundation until his death in 1820. The county reports constitute undoubtedly the most valuable achievement of the Board. Young wrote six of the reports himself. He was critical, however, of some of the men chosen for the project, and of the haste with which the president of the Board, Sir John Sinclair (1754-1835), attempted to rush it through. Cf. *Autobiography,* 242-243.

[95] *Autobiography,* 427. William Marshall (1745-1818) is believed by some experts to have been a much better agriculturist than Young. Cf. Ernle, 196-197; N. Riches, *The Agricultural Revolution in Norfolk* (Chapel Hill, 1937), 6. Young clearly recognized Marshall's ability and paid tribute to it. Cf. *Autobiography,* 427, *Annals of Agriculture,* XIV, 231. Marshall's greatest work consisted of his twelve volumes, *A General Survey . . . of the Rural Oeconomy of England,* 1787-1798. In the introduction to the volumes on Norfolk (*The Rural Oeconomy of Norfolk,* 2 vols., 2d. ed., London, 1795), I, iii-xiv, Marshall makes it clear that the basis for his masterpiece was the plan, which he quotes in full, submitted to the Society of Arts in 1780. Young reviewed the volumes on Norfolk at some length and with qualified approval (*Annals of Agriculture,* VII, 342-354). His failure to review promptly the volumes on the midland counties led to a charge of unfairness by a correspondent to the *Annals* (XIII, 226). Young apologized for his remissness and the review appeared in XIV, 231-252. Young criticized Marshall pretty strongly, however, for being given too much to generalization and too little to experiment.

[96] *Autobiography,* 115. From Young's account it is impossible to tell when he sat for the portrait. The pictures were begun in 1777 and were not ready for public inspection until 1783. Cf. *Transactions of the Society,* II, 250. The only other time during the period when Young was surely in London for any length of time was during the spring of 1777. There is a reproduction of this picture opposite page 76 in Wood, *History of Society of Arts.* These wall pictures in the Society of Arts are probably the most important works of James Barry (1741-1806). For a time in the early eighties Young and Barry seem to have been quite intimate. Cf. *Autobiography,* 115-118.

[97] *Committee Reports,* 1781-1782, f. 52.

1783 Young addressed two letters to the Society which have not survived.[98] The first apparently had to do with the publication of Young's experiments on the clustered potato in the *Transactions of the Society* because a letter in the Young manuscripts written on February 10 by Secretary More is undoubtedly in answer to Young's letters of the previous month.[99] The friendly social relationship which existed between the Mores and the Youngs is shown by More's request at the end of this letter: "Remember me & my Rib to Mrs. Y."

In 1784 Arthur Young published the first volume of the *Annals of Agriculture,* the most important agricultural venture in his whole varied career. In the very first volume he paid the Society of Arts a handsome compliment. After expressing regret that the Society did not possess an experimental farm, he continued:

> That society, I am sorry to say, is not very fashionable. People of no great account in life have been its active supporters, and, in my opinion, have done by far more good with an income under a thousand pounds a year, than has been performed by three fourths of the men of great property in the nation, who have been more inclined to give them their ridicule than assistance, but knowing little more of their transactions than of a society in the moon.[100]

On February 25, 1784, Young addressed a letter to Samuel More in which he proposed that the Society should give a premium "for the invention of the best iron oven for baking potatoes" which should be cheap in construction and in operating costs. The point was that baked potatoes were much superior to raw potatoes as cattle food. On March 3 the Society referred his proposal to the Committee on Mechanics which apparently requested Young to make his proposal more specific.[101] This he did in a longer letter on March 19. The Committee on Mechanics eventually rejected the proposal on the ground "that the expence of an Iron oven of the size recommended by Mr. Young would be so great as to render it not likely to come into use for the purpose intended."[102] In Young's first letter he inserted a postscript, "Hope my Annals of Agriculture meet y^{r}. approbation."

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[98] *Minute Books,* XXVIII, ffs. 58, 61.
[99] *Add. Mss.* 35, 126, f. 227.
[100] *Annals of Agriculture,* I, 64, footnote.
[101] *Minute Books,* XXIX, f. 85.
[102] *Committee Reports,* 1783-1784, f. 230.

V

After 1784 Young's interest in the Society declined more rapidly. For some time he made it a practice to send the volumes of the *Annals* to the Society as they appeared.[103] In the *Annals* he often reviewed books and several times commented on the *Transactions of the Society,* the first volume of which had appeared in 1783. It will be remembered that Young had urged in *The Farmer's Letters,* in 1767, and also in subsequent publications that the Society should issue transactions. In the first volume of his *Memoirs of Agriculture,* Robert Dossie had also lamented the lack of official transactions. In 1772 Thomas B. Bayley had urged Young to use his influence to have regular transactions published. Yet in his *Autobiography* Young makes the following sweeping claim that he was the originator of the *Transactions:*

> When I became Chairman of the Committee of Agriculture, I was the first to propose the annual publication which afterwards took place. This proposition was at once acceded to, and Valentine Green, the engraver, had the impudence to assert that it originated with him.[104]

Unfortunately there is no evidence in the manuscript records of the Society to support Young's contention. He had become chairman of the Committee in 1774, nine years before the *Transactions* appeared. Moreover, he was no longer active in the Society when they were first published. At any rate, he was quick to praise the project. In the second volume of the *Annals* he reviewed the second volume of the *Transactions* and declared, ". . . the publication deserves great attention; . . . it does honour to the Society, and credit to the abilities of the secretary who conducts it."[105] He also urged all those interested in the progress of agriculture to become members and supporters of the Society. He praised most of the papers but stigmatized an article on the relative merits of the drill and broadcast husbandry as "the most ridiculous piece of prejudice and absurdity ever published."[106] He was also very laudatory in his re-

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[103] Such gifts were noted in *Minute Books,* XXXI, f. 6; XXXII, f. 6; XXXIII, f. 10; XXXVII, ff. 118, 136.

[104] *Autobiography,* 59. Valentine Green (1739-1813) was one of the leading mezzotint engravers of his day. Sir Henry T. Wood (*History of Society of Arts,* p. 332) discusses the respective merits of the claims of Green and Young. He decides that the final decision was due to the efforts of Green.

[105] *Annals of Agriculture,* II, 330.

[106] *Ibid.,* 324. From almost the very beginning of his writing Young had shown himself skeptical of the value of the drill method of sowing seed as contrasted with the broadcast method. Cf., for instance, his vicious attacks in 1770 upon the drill culture in *A Course*

view of Volume III of the *Transactions,* but suggested that more plates of machines should be inserted.[107] His review of Volume IX was very critical, however. Many of the premiums were for trivial and some for mischievous objects. He was especially censorious of the numerous premiums for planting trees at a time when food was scarce.[108] In one of his very last writings, the revision of the *Farmer's Kalendar,* which appeared in 1815, Young included the *Transactions* among a list of books desirable for a farmer's library.[109]

Young wrote several more letters and made several other suggestions to the Society after 1784. In the following year, 1785, he and two others sent letters regarding the culture of China hemp.[110] In 1789 he wrote to the Society urging it to give a premium for a drill.[111] The last letter which has been preserved was a personal note to Samuel More in 1792. A long gap separates this note from a letter written in 1807 bringing to the attention of the Society the premiums which the Board of Agriculture was offering.[112] And finally in 1808 he wrote a letter "on a claim for the planting of osiers."[113]

After 1784 Young's interests had expanded beyond the work of the Society of Arts. In that year he had begun his great periodical work, the *Annals of Agriculture,* which ran to forty-six volumes of which he wrote nearly a third part himself. Naturally the *Annals* took most of his time and energy. He was also actively engaged in farming at Bradfield during

of Experimental Agriculture, IV, 269-306. Even in this work, however, he admitted that drilled beans were satisfactory. The review under question in the *Annals* shows that he was still suspicious of the drill husbandry in 1784. Professor Naomi Riches in her recent valuable study (117-118) cites many evidences of Young's "amusing reluctance to admit the superiority of drilling in the face of really overwhelming evidence," even as late as 1792. In his manuscript *Elements of Agriculture,* which represents his most mature opinion, Young shows himself more favorable to drilling than in his earlier works. The invention of Cooke's drill machine removed many of his objections (*Add. Mss.* 34, 860, f. 248). This was the drill plough for which the Reverend James Cooke received a patent in 1789 and which Cooke described with a plate in the *Annals* (XIV, 20-50). Young also admitted that he had drilled his barley for many years and was satisfied "of the superiority of this method to the broadcast" (*Add. Mss.* 34, 860, f. 248). In respect to turnips he was not quite convinced, but he had come to consider horse hoeing "so much more effective" than hand hoeing that it furnished "a material inducement for preferring the drill culture . . . ." (*Add. Mss.* 34, 861, ffs. 34, 35).

[107] *Annals of Agriculture,* IV, 279-283.

[108] *Ibid.,* XVII, 307-315.

[109] *The Farmer's Kalendar,* 10th ed., (London, 1815), 650.

[110] *Minute Books,* XXXI, f. 74.

[111] *Ibid.,* XXXIV, f. 82.

[112] *Minute Books,* 1806-1807, f. 165.

[113] *Ibid.,* 1807-1808, f. 207. Apparently Young was making a claim for the premium, but the language of the minutes is not very clear.

the eighties. In 1787, 1788, and 1789 he visited France and soon afterwards became a leader in the propaganda directed against the French Revolution. Finally in 1793 he was made secretary of the newly established Board of Agriculture which also gave premiums for various agricultural improvements. Although he was now back in London, his time was fully occupied, partly by his duties as secretary to the Board, partly by his editorship of the *Annals*.

Dartmouth College JOHN G. GAZLEY

APPENDIX

Two of Young's unpublished letters, which are in the possession of the Society of Arts, are reprinted below. They give some idea of the vigor and charm of his informal style, and show the breadth of his agricultural interests. The subjects covered in these letters—new root crops, agricultural machinery, and fertilizers—are among those which Young frequently stressed as essential to agricultural improvement.

LETTER I

Gent[n]

As I cannot at present attend your meetings sufficiently for proposing any premiums & afterwards attending them to and from your Committee without which objections cannot be answered, I shall take the liberty of inclosing some minutes which you may adopt if they are approved, and at the same time explain the motives upon which I propose them.

Any good farmer that sets forth about it in earnest can raise large crops of carrots, cabbages, turneps & potatoes;[114] but gaining those crops is not at present the great object in experimental Husbandry, so much as ascertaining their value, because you will never be able to extend any branch of culture unless you previously shew that the product is marketable, and will, in any part of the kingdom yield a given value. Notwithstanding the numerous trials w[ch] have been made in large on the crops above mentioned, we are utterly ignorant of the value per ton of any of them accounts hitherto laid

[114] Turnips, which Young usually spelled with an "e," were a well-established crop in the more advanced regions by the time Young began to write. Carrots, cabbages, and potatoes were all new crops which he helped to establish. All four were used for feeding sheep and cattle and were especially valuable in the early spring when grass was scarce. All were used in place of a fallow.

upon the publick being amazingly contradictory. For this reason I have proposed premiums for the mere ascertaining the value of those crops without annexing any circumstances of culture.

Oxen or spayed heifers will I think be more generally understood than *neat* or *black* cattle, as there are many places where neat is a word never used; others where all y^e^ beasts are red.

A less sum than fifty guineas should not be offered as no person can gain the premium without being at the expence of building an engine for weighing, w^ch^ would probably cost 20 or 30 £ of it.

Weighing alive I consider as absolutely essential; if this trial is regulated by first buying the oxen & then selling them the price of the carrots &c would be decided by a good or a bad market; if y^e^ beasts were bought cheap y^e^ food would prove valuable; if dear, the contrary: but y^e^ increase in beef cannot deceive. For this reason also, killing one is necessary.

In case sheep are added, or hogs the premium should be varied because the same expence would not be incurred in weighing alive.

The fatting should be by stall feeding not only as the best mode, but also that alone w^ch^ admits accuracy.

Respecting the Machine for washing carrots, a worthy friend of mine & very valuable member, may smile & think of becoming a candidate by sending a birch broom & a tub, but those who raise very large quantities for horses or boiling for any cattle, will find the expence very great; I made a cart for my own use, on purpose to do it with the greater expedition but still it is a tedious work & you may depend on being of much service to all carrot cultivators if you gain them a means of lessening their expence; it amounts with me to very near 2 ^d^ a bushel.

The carrot drill plough would be extremely useful in saving expence in hoeing, a work w^ch^ I cannot get well done in broadcast crops under £ 3 or 4 £ an acre; variations in distance should not be allowed that the machine may be the less complex, I have named 15 inches, but any member experienced in drilling y^m^ by hand may be able to advise a more proper one: It should not be less.

I am Gent^e^
Y^r^ most obed. hbl^st^
A. YOUNG

Bradmore Farm
Jan. 23, 1772.

To ascertain the Value of Carrots, To the person who shall give the most satisfactory account verified by accurate experiments in order to determine the value of Carrots applied to fattening oxen or spayed heiffers, fifty guineas, or if a member a gold medal.[115]

[115] Members of the Society were forbidden by the rules to accept a cash premium.

It is required that the experiments be made on not less than five beasts:—that they be weighed alive on putting to carrots:—that they be stall fed on carrots & hay or on carrots alone at least three months;—that the carrots be weighed to them & the hay also if any is given;—that the beasts at the end of the fatting be again weighed alive;—that one (at least) of them be killed & the profitable dead weight taken;— and a report of all these circumstances to be made to the Society on or before the first tuesday in March 1773.

To ascertain the Value of Cabbages the same premium will be given on the like conditions for similar experiments on Cabbages.

To ascertain the value of Turneps the same premium will be given on the like conditions for similar experiments on Turneps.

To ascertain the value of Potatoes. The same premium will be given on the like conditions for similar experiments on Potatoes.

N. B. No person to be candidate for more than one.

Engine for weighing oxen alive. For the best cheapest and simplest engine for weighing oxen alive, To be produced to the Society on or before the first tuesday in November 1772. Twenty pounds.

Machine for washing carrots. For the best cheapest and simplest machine to facilitate the operation of washing carrots where there is only stagnant water. To be produced to the Society on or before the first tuesday in December 1772. Twenty pounds.

Drill Plough for carrots. For the best and cheapest drill plough for shedding carrot seed only in four rows fifteen inches asunder on flat lands without variation of depth or distance, to be produced to the Society on or before the first Tuesday in December 1772 Thirty pounds or a gold medal.

LETTER II

Bradmore F.
Nov. 9, 74

Dear S^{r}.

I recd your two favours as to the Chairman, I am at the Committees service if thought worthy of y^{t} honor.

Respecting Gypsum I sowed it over clover in y^{e} spring at y^{e} time our farmers sow ashes—proportion 1 lb. p^{r}. Rood; soil a gravelly loam naturally wet but laid dry by y^{e} form of land. Also a small exp^{t} of it, on natural grass, dry good loam—likewise on arable with barley—The result, exactly similar in all three—not the least effect to be perceived, either during y^{e} growth or at the mowing of the crop. I shewed y^{e} trials to several gentlemen, without

telling y^m^ what they were, to know their opinions—No distinction to be seen by any one.[116]

As y^e^ gyp is recommended so strongly, & by persons on whom y^e^ Society depends, there are probably some unrelated circumstances, either of soil, quantity, or management: Tho' I must remark that with a manure of any considerable merit, minutiae are un-necessary. Let a man try night soil[117] even in small qu^ts^ . . , he will not want spectacles to see y^e^ effect let him spread it when, how or in w^t^ man^r^ he pleases—Coal ashes tho' not a capital manure for y^e^ soil sown y^e^ same day as y^e^ Gyp. were beneficial evidently to y^e^ eye. I do not add y^t^ by way of reflection on a manure not sufficiently tried, but merely to check great expectations.

I am S^r^
Y^rs^

Most truly,
A. Y.

[116] Later Young came to have a more favorable opinion concerning the merits of gypsum as a fertilizer. Cf. *Annals of Agriculture,* XVI, 184-185, for an experiment conducted in 1791, and *Elements, Add. Mss.* 34, 858, ffs. 279-281.

[117] For many years Young sent a cart to London or Bury St. Edmunds to collect night soil to use as a fertilizer. Cf. *Annals of Agriculture,* III, 81, and *Elements, Add. Mss.* 34, 858, ffs. 301, 303.

Technology and the French Glass Industry, 1640-1740[1]

I

INDUSTRIAL expansion depends upon the state of the industrial arts. If we are to explain the rise of "modern industry"[2] we must know precisely what the technological developments were in particular industries during those periods that are recognized as having been extremely important in the development of modern industrial techniques. This study, therefore, deals with the growth, structure, and technology of the French glass industry during a critical period (1640-1740).[3]

It will be well to understand at the outset the state of technology attained by 1640 because glass making for commercial purposes already required several men to work together at a common furnace.[4] In Southern France, where most glass shops made bottles, drinking cups, and similar ordinary objects of common green glass, the typical furnace was circular

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[1] A traveling fellowship from the University of Chicago in 1936-1937 made possible the acquisition of data used in this study.

[2] Perhaps the most important single feature of "modern industry" is the production of commodities on a very large scale by privately owned and privately operated plants using expensive, complicated machinery and employing large numbers of wage earners working together under their employer's roof.

[3] The industry can definitely be divided into at least five branches: (1) plate, mirror, and optical glass, (2) white or crystal glass, (3) common green glass, (4) bottle glass, and (5) window glass.

[4] In my description of the methods followed in French glass production I have relied to a great extent on numerous illustrations found in Vols. IV and X of the *Recueil de planches sur les sciences, les arts libéraux et les arts mécaniques, avec leur explication* (Diderot and D'Alembert, eds.; Paris, 1765, 1772) and in Vols. III, V, and VII of the *Recueil de planches de l'encyclopédie par ordre de matières* (Panckoucke, publisher; Paris, 1784, 1787, 1789) and on the excellent articles entitled "Glacerie, ou l'art de fabriquer les glaces" and "Art de la verrerie" in Vols. III and VIII, respectively, of the *Encyclopédie méthodique: arts et métiers mécaniques* (Panckoucke, publisher; Paris, 1784, 1791). Although these works were published during the latter half of the eighteenth century, they are extremely helpful to any one interested in the technology of glass production during the century following 1640. The archives of the Saint-Gobain Plate Glass and Chemical Company in Paris contained (in 1937) abundant data on the techniques used in the production of all kinds of glass in France during the seventeenth and eighteenth centuries. Several published works also proved useful: Bosc d'Antic, *Oeuvres, contenant plusieurs mémoires sur l'art de la verrerie* .... (Paris, 1780); Haudicquer de Blancourt, *L'Art de la verrerie* (new ed.; Paris, 1718); C. Loysel, *Essai sur l'art de la verrerie* (Paris, an VIII); Néri, Merret, and Kunckel, *Art de la verrerie* (Laurent Durand, trans.; Paris, 1752); Savary des Bruslons, *Dictionnaire universel de commerce* (Paris, 1723); and Bénéton de Perrin, "Dissertation sur la verrerie," *Mémoires pour l'histoire des sciences & des beaux arts* (commonly called *Journal de Trémoux*) (Trémoux, octobre 1733).

at its base and outwardly resembled a gigantic beehive. Batch[5] filling five or six crucibles was melted in one compartment, and pieces of blown glassware were gradually cooled in an annealing compartment at the apex of the same furnace. Such a furnace was considerably smaller than the square or rectangular one usually found in those shops of Normandy making window glass. Auxiliary ovens for calcining raw materials and for tempering crucibles were built at the four corners of the Norman furnace and were heated by means of small flues in the walls of the melting furnace. The fire was not built directly on the ground, as was done in the beehive furnace, but on a grate extending the length of the furnace with a rather deep ash bin and a draft underneath. The German furnace (*four à l'Allemagne*) was employed before 1640 in certain French shops, especially in those making common and white glass in Northeastern France. In only one respect did this furnace differ from the Norman: its grate was opened at both ends rather than at one. Consequently, the fireman, by feeding the fire through both openings and by regulating the two drafts, could whip up a hotter blaze than was possible in the Norman furnace.

All of these types, the beehive, the Norman, and the German, had to be carefully made of argil bricks lest they collapse while the batch was being melted or while the molten glass was being blown.[6] During the seventeenth and eighteenth centuries most Continental glass was made of sand, potash or soda, cullet, and, occasionally, lime. Manganese or cobalt were sometimes used to modify the natural greenish color of such glass.[7] The cheapest green glass and the most transparent crystal or plate glass usually were made of the same basic materials mixed in different proportions. After the sand and cullet had been washed and mixed with the other materials, the batch was heated and calcined in special ovens. Then it was melted and refined in open crucibles placed in the main furnace. By dipping the end of their pipe into one of these crucibles the workers got enough molten glass to make a bottle, demijohn, drinking cup, goblet, or whatever their specialty may have been. French glass blowers commonly used wooden or copper molds to shape only the base of bottles and jugs; other objects were fashioned by hand. In Normandy, for example, window glass was made by blowing a large bubble and then pricking and

[5] The mixture of unmelted materials from which glass was made.

[6] Archives Nationales, F^{12}. 1489A; Y. 14124; Archives Départementales de la Gironde, C. 310, 1594; Archives Départementales de la Seine-Inférieure, E. Famille du Vaillant Desmarêts.

[7] Archives Nationales, F^{12}. 1489B; Archives de la Compagnie de Saint-Gobain, *Portefeuille des arrêts et mémoires; Encyclopédie méthodique: arts et métiers mécaniques,* III, 155; VIII, 451, 471-472, 478, 487, 499-501; Haudicquer de Blancourt.

opening it out into a flat disk. In Northeastern France, where windowpanes were produced in the German or Bohemian manner,[8] workers blew long cylinders which they slit and flattened out in specially built annealing ovens.

None of these techniques was new by 1640. Both the German furnace and the German method of blowing window glass had been used by Lorrainers before the opening of the seventeenth century.[9] Furthermore, Italian methods used in making artistic and delicate objects of crystal glass had been introduced into numerous French provinces during the sixteenth and early decades of the seventeenth century by Altarian artisans, who had been encouraged by their duke to emigrate, or by Venetians, who had left their native furnaces in defiance of certain danger and possible death.[10] Before 1640 several French shops had become so successful in imitating Venetian crystal that their products were scarcely distinguishable.[11] A producer at Antwerp in Belgium complained around 1607 that various people were violating his exclusive right to make and sell, within a limited area around his shop, all crystal ware other than true Venetian. "Certain merchants," he claimed, "instead of importing their glasses from Venice, draw them . . . from more neighboring places where one counterfeits Venetian glasses so well that glass makers themselves are able to discern the difference only with great difficulty; [and] the shops built at Mézières and Liége sell their wares as products from Venice, thereby deceiving the court and the people to the great prejudice of the State."[12]

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[8] These methods were practically identical. Windowpanes *à la Bohême* (or *en table*) were slightly thicker than those *à l'Allemagne* (or *en manchon*) and were always gradually cooled in annealing ovens before they were cut and flattened out.

[9] *See* J. Beaupré, *Les Gentilshommes verriers, ou recherches sur l'industrie et les privilèges des verriers dans l'ancienne Lorraine aux XVe, XVIe et XVIIe siècles* (2d ed.; Nancy, 1846); Henri Lepage, "Recherches sur l'industrie en Lorraine et principalement dans le département de la Meurthe (verreries, papeteries, cartes à jouer, mines)," *Mém. de la soc. des sciences, lettres et arts de Nancy,* XXVI (Nancy, 1850); Ad. Marcus, *Les Verreries du comté de Bitche: Essai historique (XVe-XVIIIe siècles)* (Nancy, 1887).

[10] *See,* for example, A. de Girancourt, *Nouvelle étude sur la verrerie de Rouen et la fabrication du cristal à la façon de Venise aux XVIe et XVIIe siècles* (Rouen, 1886); H. Schuermans, *Verres fabriqués aux Pays-Bas (et en France) à la "façon de Venise" et "d'Altare"* (Letters published; Brussels, 1884-1893).

[11] Crystal ware made at Rouen was said to be equal in every respect to that blown at Murano—the Venetian suburb where the furnaces were actually located (Le Vaillant de la Fieffe, *Les Verreries de la Normandie, les gentilshommes et artistes verriers normands* [Rouen, 1873], 291); and Nevers was long known to travelers as the little French "Murano" (Schuermans, 107, 747).

[12] Quoted in Jules Houdoy, *Verreries à la façon de Venise: la fabrication flamande d'après des documents inédits* (Paris, 1873), 13-14. Mézières was a French shop.

II

Such, in brief, was the state of technology in the French glass industry when Louis XIV ascended the throne in 1643. During the following hundred years technological changes profoundly affected certain branches of the industry. In 1665 Colbert succeeded in attracting to France a handful of Venetian glass makers, who were to help set up a plate glass and mirror shop.[13] So anxious was he to add this industry to those which already engaged the time and resources of his countrymen that he promised the workers very high wages and protection against the Draconian legislation of the Venetian Republic.[14] The shop was first set up in Saint-Antoine, a Parisian suburb; but after 1667 the furnaces were moved to Tourlaville in Normandy, and the workshop at Saint-Antoine was converted into a grinding and polishing plant.[15] Plate glass, no matter how it was made, had to be carefully finished if it was to be silvered for mirrors; consequently, its production required a much more extensive plant than was necessary for windowpanes or other objects not usually ground or polished. In accordance with Venetian methods, plate glass was blown in much the same manner as German windowpanes; *i.e.*, into long cylinders which were slit and then flattened out.

France made her most important contribution to the general technology of glass production when she successfully substituted for these old methods the process of casting or rolling plate glass. Squares of glass cast could be larger and thicker than those blown, and the adoption of the new technique led to large-scale, capitalistic production.[16] A square foot of plate glass, furthermore, could now be made much more cheaply than had formerly been possible because the new method reduced the time

[13] *See* Augustin Cochin, *La manufacture des glaces de Saint-Gobain de 1665 à 1865* (Paris, 1865) and Elphège Frémy, *Histoire de la manufacture royale des glaces de France au XVIIe et au XVIIIe siècle* (Paris, 1909).

[14] In accordance with the prevailing commercial policy of European nations, Venetian laws imposed the death penalty on all artisans who deserted their native land in order to propagate the secrets of plate-glass manufacture in foreign countries, and created emissary executioners to trail the "traitors" and mete out justice by poison or dagger upon the first occasion.

[15] Archives Nationales, G^7. 216; Bibliothèque Nationale, Mélange Colbert, Ms. 142, fols. 277-280; Eugène Boivin, *Autour de la glacerie de Tourlaville* (Cherbourg, 1929), 77-85, 97 ff.; Frémy, 56 ff.; Archives de la Compagnie de Saint-Gobain, Vieilles archives. Unfortunately, most of the manuscripts in the private archives of the Saint-Gobain Plate Glass and Chemical Company (in the home office at Paris) are unclassified and grouped in eight *liasses* and two *cartons*. I was not allowed to number them, and the individual documents had no title. Consequently, all of my references to these important manuscripts are necessarily vague and incomplete.

[16] *See* below, 157-158, 164-165.

required to make it by at least one half[17] and because relatively unskilled and low-paid workers could be substituted for those highly skilled glass blowers who had formerly been indispensable. Nine master blowers working in the plate-glass factory at Tourlaville in 1701 received annual salaries ranging from 600 *livres* to 1,200 *livres;* in 1698 the operatives employed in the casting room at Saint-Gobain were paid wages varying from 288 *livres* to 480 *livres* a year. Furthermore, according to an official of the Royal Plate Glass Company, about one-third more men were required to blow a fixed amount of plate glass than to cast it.[18]

Five different Frenchmen[19] have claimed the honor of inventing the casting process. Research among reliable primary and secondary data, however, suggests that Bernard Perrot, of Orléans, was the first to use this technique; he had successfully cast crystal in his shop shortly before April 2, 1687.[20] Be this as it may, on December 4, 1688, Louis XIV gave Abraham Thévart exclusive right throughout all France to cast glass in a factory which he and others were planning to build.[21] His furnaces, first constructed at Saint-Germain-des-Prés near Paris,[22] were located after 1692 at Saint-Gobain in Picardy.[23]

The actual technique was so simple that one is puzzled—as one frequently is after a technological change is effected—why Venetian or other glass workers had not perfected it long before 1688. With the aid of a wheeled grappler and derrick the melted glass was taken from the furnace in buckets and poured on the smooth top of the casting table. Here it was spread out with a large copper roller. At least one of the tables used at Saint-Gobain before 1750 was 116 inches long, 70 inches

[17] This estimate is based upon production-capacity figures for typical furnaces used in casting and in blowing (Archives de la Compagnie de Saint-Gobain, *Historique de la verrerie,* 167 ff., 178-179, 337, 341, 345, 389, 403 ff. 581; Vieilles archives, *liasses* and *cartons; Organisation de Saint-Gobain en 1769:* [*III*] *Administration; Portefeuille des arrêts et mémoires*).

[18] Archives de la Compagnie de Saint-Gobain, Vieilles archives.

[19] Bernard Perrot of Orléans, Pierre Perreau of Paris, Sieur Fresny de Rivières, Louis Lucas de Néhou, and Abraham Thévart.

[20] Archives Départementales du Loiret, A. 396. Considerable uncertainty exists as to the actual date of the discovery, and M. Schuermans (804) certainly antedates it (*see* Boivin, 277 ff.).

[21] Archives Nationales, F^{12}. 640, 1491; Archives de la Compagnie de Saint-Gobain, Vieilles archives, *liasse* 1665-1737; Bibliothèque Nationale, Fonds français, Ms. 21808, fols. 70-72. Whether Perrot had sufficient capital to utilize his invention apparently did not influence in the least the king's decision, for in none of the documents pertaining to this matter was this question considered.

[22] Abraham du Pradel, *Le Livre commode des adresses de Paris pour 1692* (Edouard Fournier, ed.; Paris, 1878), II, 140-141.

[23] Archives de la Compagnie de Saint-Gobain, Vieilles archives; Frémy, 86.

wide, and 3⅔ inches thick. Between nine and eleven tons of copper were used in making such a table, and roughly 2¾ tons were required for the smaller ones used at Saint-Gobain during the first quarter of the eighteenth century.[24] The smaller tables cost approximately 750 *l.* each. The instruments directly used in casting were considerably more expensive, therefore, than the pipes used in blowing.[25] Casting factories, furthermore, had to have much larger melting furnaces and annealing ovens than any workshops in which glass was blown. In 1702 the physical equipment at Saint-Gobain, where plate glass was both cast and blown, was valued at 322,903 *l.*, whereas at Tourlaville, where plate glass was only blown, the plant was worth only 81,429 *l.*[26] Consequently, casting could hardly prove a profitable technique unless the output of glass was fairly large.

III

Almost as great an innovation as casting was the new process used in making bottles. But this time the French were borrowers and imitators rather than inventors. Some bottle manufacturers began about 1700[27] to copy English glass makers who had begun almost a century earlier[28] to burn coal in their furnaces in place of wood. Throughout the seventeenth century most bottles blown in French shops had been extremely fragile and unfit for bottling effervescent beverages.[29] This situation was remedied after 1700 as increasing numbers of French entrepreneurs began to make bottles while burning only coal.[30] Their glass, popularly de-

[24] Archives de la Compagnie de Saint-Gobain, *Lettres . . . mémoires techniques sur les glaces, 1769-1800.*

[25] In 1700 all instruments directly used in casting at Saint-Gobain were valued at 14,558 *l.* (Frémy, 267-268 n.).

[26] Archives de la Compagnie de Saint-Gobain, Vieilles archives, *liasses* and *cartons.* Each of these establishments seems to have had two main furnaces. One at Saint-Gobain was for casting; the other was used in blowing.

[27] Sometime between 1669 and 1700 bottles were made after English methods in a factory at Charleroi. Louis XIV had chartered this factory in 1669, but Charleroi had probably reverted to Spanish rule before the shop adopted the English techniques. (Archives Nationales, AD^{xi}. 53; F^{12}. *registres* 71^{2}, pp. 118-120; 73, pp. 561-565; *liasse* 1488A; K. 1032, document 73.) Gaspard Thevenot, shortly after 1708, built a bottle factory near the castle of Folembray in Picardy (Archives Nationales, F^{12}. 1488A; G^{7}. 1697). So far as I have been able to ascertain, this factory was the first shop in France proper which made bottles in the English manner.

[28] John U. Nef, *The Rise of the British Coal Industry* (London, 1932), I, 219.

[29] Haudicquer de Blancourt, I, 36-37.

[30] In 1740 there may have been in France proper as many as fourteen bottle factories using only coal in their melting furnaces. This estimate is based on numerous manuscripts in various departmental and national archives and the specific references—totaling more than 75—can be obtained from my unpublished dissertation entitled "The History of the French Glass Industry from 1640-1740 (The University of Chicago, 1940), 25-26.

scribed as *à la façon d'Angleterre,* was invariably coarse, darkly colored, and not very breakable. These new bottles were stronger than the others because the average temperature in the melting furnaces was considerably increased after bottle producers substituted coal for wood. The melting process was therefore speeded up, and more sand and less potash or soda could be used in the batch.

It was not easy to burn coal in place of wood. At least three obstacles stood in the way: (1) most furnaces burning wood were not equipped with drafts strong enough to whip up as hot a blaze from mineral fuel as was required to melt batch;[31] (2) the obnoxious fumes from coal smoke hampered the blowers as they worked before the furnace doors; and (3) the smoke colored the glass lying exposed to the fire in open crucibles. If the first of these obstacles was to be overcome, a special furnace, copied after the English, had to be built. Outwardly, it resembled the German furnace,[32] which various French shops manufacturing white or green glass had long been using. It was square or rectangular at its base and had a fire grate, open at both ends, extending from one end of the furnace to the other. Its special feature lay in its distinctive underground structure. A long, small tunnel or cave was built underneath the furnace, cutting the ash bin at right angles and extending beyond the walls of the workshop in which the furnace was housed. This supplied a very strong draft, for the cooler air outside the shop raced through the tunnel into the hot furnace. Apparently without exception, all coal-burning furnaces built in France after 1700 were modeled along these lines. The owners of the Sèvres bottle factory stated around 1747 that such a furnace had recently cost them 8,000 *l.*[33] This was probably twice the cost of building an entire shop similar to the ones in Southern France which had been producing bottles and various objects of common glass for centuries.[34]

The English-type furnace in itself did not lessen the inconvenience that the sulphurous coal fumes caused glass blowers. The workshop that was typical of all branches in the French glass industry, and that housed the melting furnaces and annealing ovens was square or rectangular and equipped with numerous doors and windows through which smoke from its furnaces passed. Few had any chimneys. When glass was being melted,

[31] *See* above, 154.

[32] Archives Nationales, F[12]. *registre* 75, p. 585; *Encyclopédie méthodique: arts et métiers mécaniques,* VIII, 454.

[33] Archives Nationales, V[7]. 491.

[34] *See* below, 164.

an uninformed passerby probably thought that the shop was on fire. The glass shop *à l'anglaise,* on the other hand, resembled a large inverted funnel. Its floor plan was circular; and after rising above ground for some eight or ten feet, its walls converged and formed a single high chimney, the base of which was eighteen or more feet above the tiebeams. All the windows and doors of the shop were closed while glass was being melted, and a direct current of air was established *throughout the entire building.* The only way air could enter was through the tunneled drafts of the furnace, and its only outlet was the chimney in the roof of the shop. The English shop, consequently, had two great advantages over the French: Coal fumes were quickly drawn from the interior of the workroom, and a higher temperature could be attained in the melting furnace because of the stronger draft. This latter advantage, it was said, was especially important because the time required to liquefy the batch was reduced by two thirds, and one-fifth less coal had to be burned.[35]

Despite its distinct advantages, the French were slow in copying the English shop. As late as 1784 an enterprising man named De Revelard addressed a memoir to the French Government in which he claimed to have acquired the "secret" of constructing glass shops in the English manner. He, therefore, asked the Government for financial assistance so that he could build one in Provence which would serve as a model to other glass producers.[36] De Revelard was correct in stating in his petition that no faithful copy of the English model had been built in France, yet several Frenchmen making dark bottles had erected shops which embodied many English features. Before the middle of the eighteenth century, the workshop of a bottle factory at Bordeaux, for example, had been built with a steeply slanting roof, pierced in the center by a large opening through which smoke could escape. The base of the building, however, was rectangular instead of circular.[37]

The third difficulty encountered when coal was substituted for wood, namely, keeping the coal smoke from coloring the glass in the open crucibles, was not at all successfully solved by glass makers in France before 1740.[38] Certain entrepreneurs making crystal glass were trying as late as 1786 to overcome this difficulty by using coke, but their results were

[35] *Encyclopédie méthodique: arts et métiers mécaniques,* VIII, 468-469.
[36] Archives Départementales des Bouches-du-Rhône, C. 3418.
[37] Archives Départementales de la Gironde, C. 310, 1594.
[38] Archives Nationales, F^{12}. 1487, 1489A; Archives Départementales de la Seine-Inférieure, C. 159.

not encouraging.[39] M. Deslandes, one-time director of the Saint-Gobain plate-glass factory before the French Revolution, made some rather scornful remarks concerning coke when he was discussing different types of fuel that could be used by glass makers. "I shall not even mention *charbon dessouffré,*" he wrote, "which people have talked about so much and which has been formerly praised all too highly and without reason."[40] By 1612 an enterprising Englishman had solved the problem by constructing covered crucibles which kept the fire and smoke from coming in contact with the glass,[41] but for some reason or other covered crucibles were not used in French shops before 1740 or to any great extent thereafter until the Revolution. This is proved by the remarks of the author of an article on the art of glass making found in the *Encyclopédie méthodique: arts et métiers mécaniques.*[42] In 1791 he wrote:

> The most beautiful drinking cups *à la Bohême* that are known today, such as those of Saint-Quirin, Saint-Louis, etc., are made in furnaces heated with wood. Coal-burning furnaces have been experimented with, but no matter what care, skill, or intelligence is given to the experiment the color of the glass is never as bright and clear as that melted in log-burning ovens. The smoke from the fuel is a sufficient cause of this defect. . . . One cannot hope to attain the same perfection in glass making with a coal fire that one does with a wood fire *unless one succeeds in using covered crucibles in the melting process.*[43]

The failure to use covered crucibles explains why only bottle manufacturers in France were able to substitute coal for wood. Whether bottles were dark brown or white mattered little. In fact, wine and brandy merchants during the eighteenth century came to accept only the darkest bottles, for this very darkness was taken as an indication of the superior strength of the bottles.[44] Several documents indicate that various producers of crystal glass had tried to use turf or some sort of mineral fuel in place of wood in 1600,[45] 1616-1619,[46] and 1666;[47] but apparently none

[39] Archives Nationales, F^{12}. 2425.
[40] Archives de la Compagnie de Saint-Gobain, *Historique de la verrerie,* 28.
[41] John U. Nef, "A Comparison of Industrial Growth in France and England from 1540 to 1640," *The Journal of Political Economy,* XLIV (1936), 306.
[42] VIII, 486-487.
[43] Italics supplied.
[44] Archives Départementales de la Seine-Inférieure, E. 785.
[45] Archives Nationales, X^{1a}. *registre* 8644, fols. 167-169.
[46] Le Vaillant de la Fieffe, 278.
[47] Paul-M. Bondois, *Les Verreries nivernaises et orléanaises au XVIIe siècle: Jean Castellan et Bernard Perrot (1647-1709)* (Paris, 1932), 9-10; Edouard Garnier, *Histoire de la verrerie et de l'émaillerie* (Tours, 1886), 169.

of these experiments had been very successful, for they left no lasting imprint on the development of the industry in France. A glass worker of German origin could truthfully state in 1724 that there was not a single coal-burning furnace in all of France in which crystal glass was made.[48] Norman producers of windowpanes seem to have never burned anything but wood in their furnace before 1789. There is some evidence, on the other hand, that window glass made in the German manner may have been melted in coal-burning furnaces located at Fresnes around 1716[49] and at Brassac in Auvergne in 1740.[50] During the latter half of the eighteenth century several shops, especially around Lyons, made large quantities of such glass while burning only coal.[51] The Royal Plate Glass Company, which had a nationwide monopoly in the production of plate glass and mirrors, used wood almost exclusively from 1665 to 1789.[52]

The French were even slower in adopting the English techniques of making flint glass than they were in substituting coal for logs. In fact, no French shop successfully produced brilliant crystal made with lead oxide until 1786.[53] A government official reported in December 1786: "To tell the truth, several French shops make a white glass which is beautiful enough and to which is given the name 'crystal,' but none of it has the beauty and weight of real crystal, i.e., of England; and I think that, in general, French crystal does not enjoy a great reputation, and that little is exported to foreign countries."[54] "Italian" crystal blown in France during the eighteenth century was not nearly so popular or so artistically wrought as that made during the sixteenth and first half of

[48] Archives Départementales de la Gironde, C. 1594.

[49] Archives Nationales, F^{12}. 1488A.

[50] Archives Départementales du Puy-de-Dôme, C. 574.

[51] Archives Départementales de la Gironde, C. 1596; Archives Départementales du Rhône, C. 13.

[52] Some attempts were made to burn coal in its furnaces at Tourlaville and Saint-Gobain, but the experiments were never wholly satisfactory or popular (Archives Nationales, F^{12}. 1487; O^{1}. 1992A, *côtes* 4 and 9; Archives de la Compagnie de Saint-Gobain, Vieilles archives, *liasses* and *cartons; Historique de la verrerie*, 20, 21; Bibliothèque Municipale de Caen, Ms. 425, Vol. I, A. 2, p. 3; Cochin, 76; Frémy, 253).

[53] At this time a French factory was successfully melting this kind of crystal. This was the large Cristallerie de la Reine, which had been moved to Montcenis in Burgundy soon after it had first been opened at Saint-Cloud (Archives Nationales, F^{12}. 1486, 2425). At least seven other attempts to make flint glass were made either shortly before or after 1786 (Archives Nationales, F^{12}. 1486, 1487, 1497B, 2425, 2766; Archives Départementales de l'Hérault, C. 2766; Archives Départementales de la Seine-Inférieure, C. 159, 2120).

[54] Archives Nationales, F^{12}. 1486.

the seventeenth century.[55] The best "crystal" produced by Frenchmen around 1740 was made according to German or Bohemian methods.[56] The number of French shops using these methods and the German-type furnace multiplied after 1700 and supplied a larger and larger portion of the growing domestic demand for windowpanes and other objects made of white glass.

IV

So far this study has revealed that most branches of the French glass industry were affected by important technological changes. Frenchmen first acquired the knowledge and skill of making plate glass soon after 1665 by watching immigrant Venetians, and later they revolutionized the industry by developing the casting process. Producers successfully burned coal in bottle furnaces; and German techniques and furnaces, although not unknown in Northeastern France before 1640, became increasingly popular with entrepreneurs making white and window glass in other provinces. These technological improvements—important in themselves to historians generally—are especially significant from an economist's viewpoint since they directly influenced the size of individual shops and their scale of operations.

By 1740 several shops making plate, bottle, window, and white glass had acquired physical plants which were impressive. In addition to the central hall in which glass was melted and blown there were usually several storehouses for raw materials and finished glassware; workshops for the blacksmith, carpenter, cartwright, forger, potter, and crate- and brickmakers; stables for draft animals; and barracks in which the workers lived.[57] Many factories in the northern half of France resembled small villages.[58] The premises of the plate-glass factories at Tourlaville and Saint-Gobain were entirely surrounded by walls, and all gates were care-

[55] Savary des Bruslons, during the first quarter of the eighteenth century, stated in his *Dictionnaire universel de commerce* (I, col. 1617; II, col. 1893): "Any kind of drinking cup other than ordinary glass is scarcely used any more in France, and Venetian crystal glasses are no longer esteemed. . . ." "Frenchmen scarcely know at present what Venetian Goblets are like."

[56] Henri Havard, *Les Arts de l'ameublement: La verrerie* (Paris, n.d.), 196. Attempts were even made to introduce Bohemian, German, and Lorraine techniques into Italy (Schuermans, 292, 549, 874).

[57] By the middle of the eighteenth century the Royal Plate Glass Company had built 52 houses for its workers at Saint-Gobain, and shortly after 1770 it built 22 more (Archives de la Compagnie de Saint-Gobain, *Organisation de Saint-Gobain en 1769:* [*III*] *Administration*).

[58] Archives Nationales, Q^1. 804; Archives Départementales de la Seine-Inférieure, E. Famille du Vaillant Desmarêts; Archives de la Compagnie de Saint-Gobain, *Historique de la verrerie,* 217; Boivin, 127; Baron de Dietrich, *Description des gîtes de minérai, forges, salines, verreries . . . de la Lorraine méridionale et septentrionale* (Paris, an VIII), 325; Frémy, 190; Le Vaillant de la Fieffe, 134-135.

fully watched, presumably to prevent the theft of industrial secrets. In 1753, the Intendant of Finances accused the officials at Tourlaville of giving refuge to an escaped prisoner,[59] and on other occasions Crown officials referred to such factories as veritable fortresses into which not even the agents of the salt monopoly could penetrate to prevent fraud.

All this indicates that some producers had invested considerable amounts of capital in physical equipment. The buildings and land of a plate-glass factory at Dombes were valued in 1709 at 79,912 *l.* and its tools and equipment at 29,276 *l.*[60] The Royal Plate Glass Company[61] had buildings, land, and equipment at Saint-Gobain, Saint-Antoine, and Tourlaville the total value of which in 1702 was almost 550,000 *l.*[62] The physical equipment of the coal-burning bottle factory at Saint-Paul near Rouen was given a value of 32,264 *l.* 7*s.* 2*d.* in its balance sheet prepared on August 10, 1735;[63] and there were several bottle factories considerably larger than this one. The little glass shops (*petites verreries*) in which common and even some crystal glass was made, on the other hand, were much smaller. The techniques they employed did not require any extensive plant or expensive equipment. Even as late as the middle of the eighteenth century only from three to five thousand *livres* was necessary to build and equip such a shop.[64]

These figures as to the amount of capital invested in physical plant indicate that plate-glass and bottle-glass factories operated on a much larger scale than did those making crystal and common green glass. This generalization, furthermore, is supported by additional data on various shops which give the value of their total assets, the number of workers they employed, and the amount of glassware they produced each year.

The Royal Plate Glass Company, when it was first organized in 1665, was capitalized at 60,000 *livres tournois*. By May 1702 its assets were valued at almost four million; and from this date to 1778 they more than trebled in value. During the decade 1741-1750 the company employed from 900 to 1,000 workers on either a part-time or full-time

[59] Archives Départementales du Calvados, C. 2973, 2975.

[60] Archives Nationales, G^7. 1690. If these sums had been spent to employ unskilled laborers, approximately 272,970 men could have been put to work for one day.

[61] This company was both privately owned and operated. In 1695 the glass-blowing factory with furnaces at Tourlaville and finishing plant at Saint-Antoine had merged with the glass-casting factory established at Saint-Gobain.

[62] Archives de la Compagnie de Saint-Gobain, Vieilles archives, *liasses* and *cartons*.

[63] Archives Départementales de la Seine-Inférieure, E. 785.

[64] Archives Départementales de l'Hérault, C. 2764; Archives Départementales de la Nièvre, B. 230; Paul Rodier, *Les Verreries des hautes forêts de Darney* (Epinal, 1909), 32.

basis and may have made as much as 850 tons of glass each year. By 1740 the company was selling annually glass worth almost a million *livres*.[65]

The largest of the dark-bottle factories built in France after 1700—the one located at Sèvres—represented a capital investment of more than 200,000 *l.* and made about 340 tons of bottles each year from 1737 through 1739. The others were somewhat smaller. Their annual output, which ranged from 160 to 240 tons of dark glass, was produced by 25 or 35 artisans working with equipment valued anywhere from 60,000 *l.* to 120,000 *l.*[66]

Although most of the Norman factories producing window glass in 1740 had been in existence for over a century, they were no larger than the dark-bottle factories; nor had they increased their scale of operations to any great extent since 1640. In 1740 the value of their assets ranged from 50,000 *l.* to 100,000 *l.*, and the 30 or 50 artisans working in each plant produced each year from 150 to 200 tons of window glass and about 70 tons of common green glass.[67]

The shops for making windowpanes in the German or Bohemian manner, which were built in Northeastern France after 1700, were usually smaller than the window-glass factories in Normandy. Probably none of them produced more than 150 tons of glass in any year preceding 1740 even though they hired almost as many workers as the Norman fac-

[65] This summary is based on data found in: Archives Nationales, E. *registre* 1911 (9 mars 1700); F^{12}. 1490, 1491; G^{7}. 219 (8 septembre 1714), 1690; O^{1}. 1992A, *côtes* 2 and 4; T. 14^{1}, *côte* 10; Archives Départementales du Calvados, C. 2975; Archives de la Compagnie de Saint-Gobain, Vieilles archives, *liasses* and *cartons; Délibérations,* fol. 47; *Etat des officiers et commis, 1774-1792; Historique de la verrerie,* 126 ff., 167 ff., 178-179, 337, 341, 345, 389, 403 ff., 581; *Organisation de Saint-Gobain en 1769: (I) Fabrication, (II) Ouvriers, (III) Administration; Portefeuille des arrêts et mémoires;* Bibliothèque Nationale, Collection Moreau, Ms. 1384, fols. 240-249; Mélange Colbert, Ms. 142, fol. 277; Frémy, 57-58, 59, 60, 103, 105, 218 ff., 233, 237 n. 1.

[66] Archives Nationales, E. *registre* 1035B, fols. 133-134; F^{12}. *registres* 75, pp. 577 ff.; 83, pp. 456-475; *liasses* 1486, 1488A, 1489A, 1489B, 1490; Q^{1}. 1508 (28 octobre 1754); V^{7}. 490; Archives Départementales du Calvados, C. 2975; Archives Départementales de la Côte-d'Or, C. 1918; Archives Départementales de la Gironde, C. 1594, 1595; Archives Départementales de l'Hérault, A. 45, document 107; Archives Départementales d'Ille-et-Vilaine, C. 1518, 3929; Archives Départementales d'Indre-et-Loire, C. 140; Archives Départementales du Puy-de-Dôme, C. 576; Archives Départementales du Rhône, C. 13, 14; Archives Départementales de la Seine-Inférieure, E. 785.

[67] Archives Nationales, F^{12}. 1486, 1489A; G^{7}. 726; Y. 14124; Archives Départementales du Calvados, C. *registres* 22-25, p. 752; Archives Départementales de la Seine-Inférieure, E. Famille du Vaillant Desmarêts; Archives Départementales du Tarn, E. *registre* 329, fols. 247-248; Archives de la Compagnie de Saint-Gobain, Vieilles archives, *liasse* 1665-1737; Le Vaillant de la Fieffe, 19, 147-148, 170, 203, 481.

tories.[68] It is interesting to note at this point, however, that these plants were on the verge of increasing their size. During the latter half of the eighteenth century several of them—notably, Saint-Louis and Saint-Quirin—operated on a scale at least twice as large as that of any similar plant in 1740.[69]

Common and white glass in 1640 had been made almost entirely in small establishments; and, in spite of a few exceptional cases, production on a small scale continued to characterize these branches of the industry a hundred years later. The majority of the common glass shops scattered about in the forests of Guyenne, Languedoc, Lorraine, and Provence had certainly not increased their output appreciably since 1640,[70] and were probably producing from 30 to 70 tons of glass during each of the years immediately preceding 1740.[71] At the same time, however, there were a few factories making common green bottles the annual output of which may well have been 160 or 200 tons, and a few others specializing in goblets and drinking cups with a probable output of 150 tons each year. Many of these larger factories were located in Northeastern France, a region where prosperity in the industry became especially noticeable soon after 1720.

V

Certain conclusions can now be drawn from this survey: (1) the largest operating plant in the entire glass industry was to be found in that branch making plate glass and mirrors; (2) whereas in 1640 most French bottles had been made in small shops equipped with log-burning furnaces, a hundred years later large-scale production was characteristic of all the bottle factories using coal and of several of the others still burning wood; (3) window-glass shops in Normandy had already become fairly large by 1640, and there was no marked tendency for the typical shop in this field to expand its output before 1740; (4) enterprises

[68] Bibliothèque Nationale, Collection Moreau, Ms. 901, fol. 657; Baron de Dietrich, 26, 34, 37, 301, 345, 374, 378; *Description des gîtes de minérai, forges, salines, verreries . . . de la Haute et Basse-Alsace* (Paris, 1789), 261, 330, 357, "Tableau général" in the Appendix; A. Fournier, *La Verrerie de Portieux* (Nancy, 1886), 14-15 n., 34, 75 n. 1.

[69] Archives Nationales, F^{12}. 680, 1487; Q^{1}. 805.

[70] In fact, it seems more likely that they were producing less in 1740 than a century earlier.

[71] Archives Nationales, E. 1741 (18 février 1667); F^{12}. 680, 1488A; Q^{1}. 1625, 1626; Archives Départmentales des Bouches-du-Rhône, C. 2301; Archives Départementales du Calvados, C. 2975; Archives Départmentales de l'Hérault, C. 2760; Archives Départementales de la Nièvre, E. *registres* 265, 266; Bibliothèque Nationale, Collection Moreau, Mss. 901, fol. 678; 977, fol. 152; Le Vaillant de la Fieffe, 369, 389; Saint-Quirin, "Les Verriers du Languedoc (1290-1790)," *Bull. de la soc. languedocienne de géographie,* XXVII (1904), 288; XXVIII (1905), 201-203, 355-358.

making window and white glass according to German or Bohemian methods in 1740 were considerably larger than most seventeenth-century white glass shops; (5) the small shop still dominated the common glass industry.

These conclusions indicate that large-scale production was far more common in the glass industry as a whole in 1740 than it had been a century earlier. In many regions, especially in the southern provinces, the number of small shops producing common glass and Venetian crystal had decreased, and shops with an annual output of more than one hundred fifty tons had definitely increased in number. In 1700 there had not been a single establishment in France making dark bottles in the English manner; forty years later the country had fourteen. Plate glass, furthermore, had not been produced in commercial quantities in French shops until 1665; by 1740 the Royal Plate Glass Company had probably become the largest factory of its kind in the world. At the same time the glass industry was again flourishing in Northeastern France. The sixteenth century had been an era of prosperity for this region, but during the seventeenth century all branches of the glass industry there had languished. From 1699 through 1740 at least twenty-four shops were reopened or built for the first time in the region comprising Alsace, County of Bitche, Franche-Comté, and Lorraine; and many of these, producing window and white glass after German or Bohemian methods, operated on a large scale.[72]

These developments in the size and number of individual plants in the different branches of the glass industry were closely correlated with the technological progress achieved from 1640 to 1740. The new methods of making plate and bottle glass were conducive to large-scale production, and the increasing popularity of white and window glass made according to German techniques doubtless stimulated the expansion of the industry in Northeastern France. Technological forces, however, were not the only ones affecting the scale of operations of individual shops. The Royal Plate Glass Company probably would not have been as large as it was in 1740 had it not enjoyed exclusive privileges in the production of plate and mirror glass throughout the nation. Nor would the dark-bottle or German window-glass industries have prospered so much as they did after 1700 if the use of their products among the middle and lower classes in French society had not increased.

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[72] These generalizations about the increase in the number of shops in the different branches of the glass industry from 1640 to 1740 are based on a study of both primary and secondary sources. Exact reference to these sources—all too numerous to indicate here—can be obtained from my unpublished University of Chicago dissertation.

The Classical Economists and the Factory Acts

I

BETWEEN 1815 and 1850, the economic policy of England was marked by several far-reaching reforms advocated by Adam Smith, David Ricardo, and their disciples. Revision of monetary and banking policy, abandonment of the archaic Navigation Acts, and eventual repeal of the Corn Laws, all bear the unmistakable impress of the influence of the classical economists.

Even then, however, the economist's reputation was not without blemish. A tinge of notoriety tainted its pristine purity, especially because "the dismal science" seemed to offer so little hope for improving the lot of the toiling masses, and in a period marked by growing humanitarianism, the economist's pessimism was bound to provoke bitter hostility.[1] Malthus, Ricardo, Senior, and their associates were excoriated bitterly for their indifference to the welfare of mankind, for a heartlessness capable of postulating and advocating the Malthusian doctrine of population, for the hopelessness implicit in the Iron Law of Wages, and the inequality indicated by the Ricardian theory of rent.

Humanitarianism was not alone in its cpposition to the economists; good conservatives desiring to preserve the *status quo* and hostile to the changes in policy that were occurring looked upon the political economist as nothing less than an apostle of Satan.[2] The large landowners, in particular, were bitter in their attacks upon the classical school.

This odd combination of notoriety and prestige enjoyed by the economists has led historians to ascribe to them an influence, both good and bad, to which they were not entitled. The economists were not always in favor of less government; indeed it would be an interesting exercise to draw up a list of occasions on which members of the classical school favored government regulation of particular phases of economic enterprise. Adam Smith, for example, favored government regulation of

[1] Élie Halévy, *A History of the English People* (London, 1927), III, 109-113. *See also,* Walter P. Hall, "Certain Reactions against Laissez Faire," *American Historical Association, Annual Report* (1913), I, 129-138.

[2] One writer referred to ". . . the most revolting, the most injurious, as well as happily, the most unfounded and irrational doctrines" of political economy, *Quarterly Review,* XLVI (November, 1831), 117; to a writer in *Blackwood's,* ". . . this political economy is a destroyer, not only of morals, but of wealth likewise . . .", *Blackwood's Magazine,* XXIX (February, 1831), 358; the political economists who contributed to the *Edinburgh Review* were called ". . . serpents, whose hiss, however, is worse than their bite," *ibid.,* 404.

wage payments, banknote issues, the merchant marine; and he approved the limited use of bounties; Malthus favored the Corn Laws; Ricardo advocated a national bank of issue with exclusive privileges, and suggested workingmen's annuities.[3]

It is nevertheless true that members of the classical school were often in opposition to government regulation of economic enterprise, sharply criticizing governmental regulations which they deemed unwise. Likewise, they opposed new attempts at control which they believed were contrary to sound economic theory and good policy.[4] But any attempt to attribute all laissez-faire tendencies of the first half of the nineteenth century to the economists would be quite misleading.

The greatest care must be exercised in determining the attitude of the economists on particular issues concerning economic policy. Without careful investigation, it would certainly be unwise to assume that, because the economists espoused the principle of economic freedom, they perforce opposed all government regulation. Yet, that is precisely what has often been done. The literature describing the history of factory legislation abounds with unwarranted assumptions unsupported by evidence. The reiterated thesis found in most secondary literature is that the economists as a group were opposed to the Factory Acts, and that their theories were continuously used by opponents of such legislation to prevent its passage. Three assertions by well-known authorities are typical. Cunningham states that "Each step was gained in the face of strong opposition, for the economic experts of the day—of whom Mr. Nassau Senior was the most effective spokesman—were clear that a reduction of hours would mean such a serious loss to employers that the trade of the country must inevitably suffer; and the mischievous effects react on the workers themselves."[5] Speaking of the opposition to the Factory Acts of 1833, the Hammonds in their biography of Lord Shaftesbury reach the following conclusion: "All these men thought of themselves as holding watching briefs for the painful truths of political economy, in a world that was dazzled by the false and glittering lights of hope. Those truths did not seem less important because they were held with conviction by the great

[3] C. J. Ratzlaff, "Economic Control in the Nineteenth Century," *Planned Society Yesterday, Today and Tomorrow* (edited by Findlay Mackenzie, New York, 1937), 135-137; J. M. Keynes, *The End of Laissez Faire* (New York, 1926), 27; Edwin Cannan, *A History of the Theories of Production and Distribution in English Political Economy from 1776 to 1848* (London, 1917), 379-392.

[4] Edwin Cannan, *History of the Theories*, 379-392.

[5] William Cunningham, *The Growth of English Commerce and Industry in Modern Times:* Part II, Laissez Faire (Cambridge, 1912), 789.

body of employers, who were, in the main, supporters of the government."[6] Lastly, Hutchins and Harrison in their standard work, assert concerning the Act of 1833 that "While political economists were propounding their theories of the advantages of *laissez faire* and freedom of contract between employers and employed, the men who were brought face to face with industrial conditions recognised that there was no such thing as freedom of contract."[7] A large number of similar views could easily be cited.[8]

I propose to investigate the validity of these assumptions. In doing so, I shall attempt to answer the following two questions: first, did the political economists oppose the passage of the Factory Acts as inconsistent with classical economic theory? Second, were arguments based ostensibly on classical economic theory influential factors in the history of factory legislation to 1833?

II

The answer to the first question can be clear and incisive. Although the direct influence of the political economists on labor legislation was negligible, any influence that was exerted tended to favor, rather than to oppose, the passage of the Factory Acts.

Contrary to the belief of most historians, the political economist was not greatly interested in the regulation of child labor in England during the first forty years of the nineteenth century. I have been able to discover very few pamphlets or tracts written by leading economists of that period on factory regulation. The only one of prominence was Senior's *Letters on the Factory Acts,* which was not published until 1837.[9] The absence of tracts assumes particular significance when one recalls that the early

[6] J. L. and Barbara Hammond, *Lord Shaftesbury* (London, 1923), 25.

[7] B. L. Hutchins and A. Harrison, *A History of Factory Legislation* (London, 1911), 49-50.

[8] For examples *see* J. W. Bready, *Lord Shaftesbury and Social-Industrial Progress* (London, 1926), 183; A. Birnie, *An Economic History of Europe, 1760-1930* (London, 1930), 199, 201; Walter P. Hall, "Certain Early Reactions . . . ," in *American History Association, Annual Report* (1913), I, 131; G. M. Trevelyan, *British History in the Nineteenth Century and After* (London, 1937), 248; M. M. Knight, H. E. Barnes, and F. Flugel, *Economic History of Europe in Modern Times* (New York, 1928), 401-402; Arnold Toynbee, *Lectures on the Industrial Revolution of the Eighteenth Century in England* (London, 1890), 18, 130.

[9] *See,* e.g., John Ramsay McCulloch, *The Literature of Political Economy* (London, 1845), 236-247; also, Judith Blow Williams, *A Bibliography of the Social and Economic History of Great Britain, 1750-1850* (New York, 1926), II, 188-205; Hutchins and Harrison, *History of Factory Legislation,* 282-284. I examined also the Seligman Collection at Columbia University in an effort to locate tracts on the subject.

nineteenth-century economists were in the habit of writing pamphlets and tracts on pressing economic questions of their day.

An examination of the basic contributions of the economists as set forth in their substantial treatises yields the same negative results; there is no sign of opposition to nor even any particular interest in factory legislation.[10] Similarly, the published correspondence of Ricardo, Malthus, and McCulloch makes no mention of factory regulation.

Another possible measure of the economist's attitude may be found by examining the debates which took place before the Political Economy Club from 1821 onward. Outstanding economists were members of the Club: Ricardo, Torrens, McCulloch, Mill, and Senior, as well as most of the minor economists of that period; and all important economic questions, whether theoretical or practical, were debated before the Club. Yet, in spite of the fact that factory legislation became a subject of bitter controversy during the first two decades of the Political Economy Club's existence, it was discussed there only twice.

On July 4, 1833, Thomas Tooke read a paper entitled, "Is legislative interference in behalf of children employed in factories consistent with sound policy; and if so, under what conditions?"[11] Instead of attacking, Tooke defended the principle of regulation of child labor in factories, particularly as it was embodied in the Act of 1833. He, himself, had been a member of the Select Committee investigating the proposed legislation, and he was instrumental in drafting the act that was finally enacted.[12] The second discussion occurred May 4, 1837, when Nassau W. Senior read a paper entitled, "What has been the effect of the Factory Regulation Act; and should any and what alterations be made in it?" It was in this paper that he advanced his famous thesis that a reduction in working hours would be disastrous to British industry, because it was in the last hour's work of the day that the profits of the manufacturers were made.[13]

Senior's argument is notoriously familiar, and has largely been accepted as typical of the view held widely by political economists,[14] an assumption unquestionably false. For the very afternoon when Senior's paper had been read, it was severely attacked by Leonard Horner, one of

[10] This, in spite of their readiness to deal with current controversial subjects in these treatises.

[11] *Proceedings of the Political Economy Club,* 1821-1920 (London, 1921), VI, 41.

[12] Hammond, *Shaftesbury,* 26.

[13] *Proceedings of the Political Economy Club,* VI, 46.

[14] For example, Cunningham, *English Commerce and Industry,* II, 789.

the factory inspectors. Making use of evidence compiled while carrying on his duties, Horner demonstrated to the satisfaction of all the economists present, save Senior and one other, that this argument was not a valid one.[15] Thus, Senior's attitude toward factory legislation definitely did not reflect the opinions of his colleagues in the Club. Yet even Senior, who overtly opposed the Factory Acts, has been maligned. Miss Bowley has ably demonstrated that he did not oppose factory legislation for children on the grounds that it destroyed the principle of free labor; indeed he was even tolerant of the earlier legislation. His opposition to the Act of 1833 was based simply on the conviction that further shortening of the hours of labor would ruin British industry.[16]

From time to time, some few economists did participate in the controversies over factory legislation. From the debates in Parliament and from the hearings of special committees, we can discover the attitude of numerous economists who were prominent in their day. Yet the striking feature is the utter lack of unanimity among them. Reputable and orthodox economists like Colonel Robert Torrens,[17] Joseph Hume,[18] Thomas Tooke, Edwin Chadwick,[19] and Leonard Horner,[20] were all favorable to factory legislation as long as it was limited to children. Michael Sadler, a self-styled economist, was chairman of the Select Committee of 1832 which investigated factory conditions; he was one of the most enthusiastic advocates of the ten-hour bill.[21]

In opposition to the legislation, one finds such prominent figures as Poulett Thomson (Lord Sydenham), who insisted that he was not opposed to the principle of factory legislation for the protection of children, but only to the bill of 1833 as drafted, although it is improbable that any bill which might have been drafted would have secured his approval.[22] Huskisson's speech in favor of the bill of 1825 was tepid at best. He had strenuously opposed the Act of 1819, and it should be recalled that the Act of 1825 was drafted solely for the purpose of strengthening the pre-

[15] *Proceedings of the Political Economy Club,* VI, 273-275. (Extract from the "Diaries of J. L. Mallet," May 5, 1837.)

[16] Marian Bowley, *Nassau Senior* (London, 1937), 256-257.

[17] *Hansard's Parliamentary Debates,* Series 3, XIX, 900-901 (July 18, 1833).

[18] *Hansard,* Series 3, XIX, 246 (July 5, 1833). Toynbee states that Hume opposed factory legislation (Toynbee, *Lectures,* 18). He opposed legislation for adults, but favored the Act of 1833 so long as it was limited to children.

[19] Hammond, *Shaftesbury,* 21.

[20] *Proceedings of the Political Economy Club,* VI, 273-275.

[21] Sydney J. Chapman, *The Lancashire Cotton Industry* (Manchester, 1904), 85.

[22] *Hansard,* Series 3, XIX, 249 (July 5, 1833); Hammond, *Shaftesbury,* 43.

vious law.[23] The most bitter opponent was Lord Lauderdale. He opposed the Act of 1819 because he alleged that it violated "the great principle of Political Economy that labour ought to be free."[24] Toynbee asserts that Ricardo also was opposed to the Factory Acts,[25] but I have been unable to find evidence either to support or to disprove this contention. Since Ricardo took no part in the debates in Parliament, and did not vote on the question, his silence would seem to indicate that he could not have been deeply interested in the issues involved.

The periodicals which exerted influence upon economic policy (*The Edinburgh Review,* for example, which was the mouthpiece of the Whig Party and classical economics) were as favorable to legislation for the protection of children as were magazines frankly opposed to laissez faire.[26] Hence I must conclude that those economists who did commit themselves on factory legislation differed widely in their attitudes. Some were enthusiastic supporters; a few were rabidly opposed. The majority were divided, expressing either mild support or mild opposition to the Factory Acts. At any rate, there was certainly no wholehearted condemnation by the economists of such humanitarian legislation.

III

Whether arguments based ostensibly on classical economic theory were an important influence on factory legislation is a question more difficult to answer.

The first act passed (1802) offers little difficulty. As Hutchins and Harrison have carefully pointed out, that bill was really not a factory bill; it was merely an extension of the existing poor laws.[27] There was no question as to Parliament's right or duty to legislate, because those affected were wards of the state.[28] Moreover, there was practically no opposition to the bill, and hence it was passed in approximately the same language as that of the bill introduced by Sir Robert Peel.[29]

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[23] William Smart, *Economic Annals of the Nineteenth Century* (London, 1910), II, 316.

[24] *Hansard,* Series 1, XXXVIII, 548 (May 7, 1818); XXXIX, 288 (February 4, 1819); XXXVIII, 656 (February 25, 1819).

[25] Toynbee, *Lectures,* 130.

[26] *The Edinburgh Review,* XLVI (June, 1821), 35; *Quarterly Review,* "The Factory System," LIX (December, 1836), 396-444; *Fraser's Magazine,* "The Commission for Perpetuating Factory Infanticide," VII (June, 1833), 707-715.

[27] Hutchins and Harrison, *History of Factory Legislation,* 16.

[28] *Ibid.*

[29] *Hansard,* Series 1, XXXVII, 559-560 (February 23, 1818); Alfred (*i.e.,* Samuel Kydd), *The History of the Factory Movement, 1802-1847* (London, 1852), I, 30-31.

Agitation for a much broader act began about 1815. This movement, begun and fostered by such prominent leaders as Peel and Robert Owen, finally resulted in the passage of the Act of 1819. The original bill provided for the prohibition of factory labor by children under ten years of age; it limited the hours for all laborers under eighteen to ten and one half; and it provided for enforcement by paid and qualified inspectors.[30]

Opposition to the proposals developed immediately, and every conceivable argument was used to defeat Peel's bill. Professor Smart, analyzing the attacks made in Parliament, concluded that no fewer than thirteen arguments of importance were used. These were the allegations.

1. Children were not overworked. Even in notoriously bad factories, children were in good health.
2. Better class mills were already model establishments.
3. Conditions were worst in small factories. These would soon be forced out of business.
4. Although the Act of 1802 was a dead letter, conditions had improved since that time.
5. It was not necessary to forbid night work, since it could not be carried on profitably.
6. Hours of work in other industries were as long as those in cotton factories.
7. Persons in the weaving industry were employed at an earlier age and for longer hours.
8. Only five and one half per cent of the people employed in the cotton-spinning industry were under ten years of age.
9. Legislative interference would injure cotton manufacturers in their competition with manufacturers of other nations.
10. The natural protectors of children were their parents.—Was it possible that parents would seek to "wear away the health and spirits of their children"?
11. Regulation of hours was an interference with the liberty of parents.
12. Regulation of hours was an interference with free labor.
13. Instead of being content with lower wages, workers would be encouraged to demand higher wages: "The habits of these people led them to combine together, and it required great delicacy on the part of employers to prevent much mischief being done in this way."[31]

This summary indicates that people who opposed factory legislation used every available weapon to forestall it, and the extent of their success

[30] Hutchins and Harrison, *History of Factory Legislation*, 24.
[31] Smart, *Economic Annals*, I, 662-663.

is attested by the innocuous law passed in that year. It is probable that the opponents of the bill would have succeeded in partially modifying it, even if they had not been able to argue against the regulation of "free labour" and infringement of "freedom of contract." Of the multitude of economic arguments used to oppose Peel's bill, some rested on laissez-faire principles, some were based on practical difficulties, while others were tinged with mercantilism.[32] Furthermore, in a year that witnessed the Peterloo Massacre and the subsequent suspension of civil liberties, Parliament was not in a mood to be too sympathetic with the welfare of the masses. Nevertheless, it must be admitted that the really strategic arguments in the discussion were based on the principle of laissez faire. Professor Smart put it vividly when he said:

> It will be noticed that it was not by any means the opposition of the employers as a body that kept back the Factory Acts, but rather the doctrinaire ideas as to the "liberty of the subject", so often invoked, before and since, against the regulation that makes for freedom.[33]

The potency of this argument is abundantly evident from the great pains taken by proponents of the legislation to prove that Peel's bill was not a violation of the great principle of "free labour." It was argued at length that children had no freedom, and hence the argument did not apply.[34] Had it not been for the tremendous respect accorded to the principle of "free labour" by both opponents and proponents of factory legislation, the possibility of passage of a more effective act in 1819 might have been greatly enhanced.

There is no need to discuss in detail the Acts of 1825 and 1831. The primary purpose of these two laws was to strengthen the administration of the previous act. Only minor changes were made, and arguments centered around the feasibility of more rigorous enforcement. The principle of the legislation was not subjected to serious attack.[35]

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[32] "The arguments used to weaken the Act of 1819 are those that belong to the mercantilist order of ideas, and are based on the twofold assumption that (a) the protection and preservation of industry on its commercial side should be the object of the State, and (b) that the proposed regulation would injure trade and drive it out of the country, eventually reducing not only the capitalists, but also the workers to beggary." Hutchins and Harrison, *History of Factory Legislation*, 27.

[33] Smart, *Economic Annals*, I, 669.

[34] Hutchins and Harrison, *History of Factory Legislation*, 25; *Hansard*, Series 1, XXXVII, 581, 582, 585 (February 23, 1818); XXXVIII, 174, 346, 349, 362, 548, 549, 1252; XXXIX, 560, 655-656, 1131-1133; XL, 1131; XLI, 929.

[35] *Hansard*, Series 2, XIII, 421-422, 643, 645, 646-647, 1008 (May 1825); Series 3, IV, 501-502; V, 388-389, 588 (1831).

A new phase of the controversy begins when the Factory Act of 1833 precipitated another bitter controversy. By this time the economic, political, and intellectual atmosphere was so markedly different from what it had been in 1819 that the issue of laissez faire became hopelessly complicated by three major factors:

1. Even opponents of factory legislation had been forced to concede that child labor was not "free labour." Rather than attacking the proposed law on theoretical grounds, they directed their arguments against the practical consequences of factory legislation.
2. The Ten-Hour Bill for children was in reality tied up with a ten-hour movement for all labor. Sadler, Lord Ashley, Oastler, Fielden, Grant, and the factory workers all believed that a reduction in the hours of labor for children would force employers to reduce the hours of all workers. It was argued on all sides that a factory could not operate when children were not working.[36]
3. Members of the Tory Party had joined the agitation for a more rigid factory act in order to embarrass the Whig Party, and thus to avenge themselves for their defeat on the Reform Bill of 1832, hoping by this means to win back some of the prestige lost in that conflict.[37]

Many of the Tories, therefore, argued for the Act of 1833 on grounds of humanitarianism but with their tongues in their cheeks. Meantime, many members of Parliament who pleaded for a ten-hour law for children were hoping that it would result in ten-hour labor for all factory workers. On the other hand, many of those bitterly opposed to the proposals of 1833 were simply expressing resentment toward the Tory Party, while others opposed the bill from fear that a reduction of working hours would either necessitate the reduction of working hours of adults, or lead to such a demand shortly. Constantly during the debates, the phrase, "limitation of hours of labour for children only," was emphasized.[38] Many members of Parliament, it is clear, were not opposed to regulation of the hours of children, provided there would be no further repercussions.

Can any conclusion be extracted from this welter of conflicting arguments, opinions, issues, and prejudices surrounding the Act of 1833? As I have already pointed out, the economists who participated in the con-

[36] Chapman, *Lancashire Cotton Industry*, 98-99; Hutchins and Harrison, *History of Factory Legislation*, 49; *Hansard*, Series 3, XIX, 235, 246 (July 5, 1833); XIX, 889 (July 18, 1833).

[37] W. H. Hutt, "The Factory System of the Early Nineteenth Century," *Economica*, VI (March, 1926), 79; Friedrich Engels, *The Condition of the Working Classes in England in 1844* (London, 1892), 170.

[38] For example, see *Hansard*, Series 3, XVI, 642-643 (March 14, 1833); XIX, 235, 246, 900-901 (July 5, 1833); XX, 449 (August 9, 1833).

troversy were widely divided in their opinions.[39] It is also evident that the theoretical arguments regarding "free labour" and "freedom of contract" which had been so potent in 1819 had lost their force when, by 1833, even the majority of the opposition reluctantly agreed that state regulation of child labor did not violate these fundamental postulates.[40]

The economic arguments that were presented were essentially practical in character. Questions concerning the possible effect of a reduction in the working hours of children on the hours of the other workers, concerning the effect of reduction in hours on foreign trade, or concerning the influence of the bill on wage rates, were predominant.[41] Obviously the shape and form of these arguments were colored by the economic concepts of the day. Yet had there been no classical economic theory, the arguments would have been essentially the same. Humanitarianism, Benthamism, current political controversies, and the hope for a ten-hour day, all tended to complicate the discussion. It does not seem that the basic postulates of classical political economy were of great importance either in shaping or in limiting the act as it was finally adopted.

To leave the problem at this point may seem rather unsatisfactory. It seems doubtful, however, whether more definite solutions to the questions proposed can be found. The answer to the first question does stand out in clear relief. The classical economists as a group did not oppose factory regulation for children. They exhibited very little interest in the question. Those who did participate in the discussion represented all possible shades of opinion, and this lack of agreement may be construed as proof that they did not find the basic postulates of their science opposed to labor legislation. Whether classical economic theory was employed as an argument against the Factory Acts, is a question less definitely answered. The concepts of "free labour" and "freedom of contract" certainly were influential in the debates of 1819. By 1833, however, their influence was seemingly negligible.

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[39] *See* above, pp. 174-175.

[40] *Hansard*, Series 3, XIX, 235 (July 5, 1833); XIX, 900 (July 18, 1833); XX, 449 (August 9, 1833).

[41] *Hansard*, Series 3, XVI, 879; XVII, 84, 899; XIX, 892-893, 896, 912.

Non-Importation, 1806-1812

I

PETER A. SCHENCK, Surveyor of Customs and Inspector of Revenue for the Port of New York, must have felt slightly exhilarated when he left his office on the evening of December 30, 1807.[1] He had that day wielded for the first time the two-edged sword placed in his hands by Congress for the destruction of British maritime arrogance. Nay more, he had struck at least seven times, by seizing that number of shipments of British goods which had arrived in two vessels ten days before. In a few days Nathan Sanford, the District Attorney, would file seven separate libels in the Federal District Court on behalf of the United States vs. twenty-two bales of woolen cloth, two cases of hats, eight boxes of linen cloth, sixteen boxes of linens, one case of woolen hosiery, two cases of plated ware, and two boxes of woolen hosiery.[2] The goods would doubtless be condemned, for Sanford was a clever lawyer and the district judge was not, like the fellow up in Massachusetts, unfriendly to Jeffersonian policies. Later the United States marshal, Peter Curtenius, would have them sold by auction outside the Tontine Coffee House; the court and marshal's costs—totaling about $120 in each case—would be paid, and the balance,[3] where there was any, would be shared equally between the customs staff and the Treasury. If this process could be repeated often enough, John Bull might soon be willing to come to terms.

Schenck had taken action, not under the Embargo Act, passed only eight days before, but under the Non-Importation Act of April, 1806, which at long last had been allowed to come into operation. In most studies of the commercial restrictions of the period, this act is given little attention.[4] Yet the policy of trying to make Britain mend her ways by refusing to buy her goods preceded, ran alongside, and outlived the Em-

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[1] Schenck was appointed surveyor in March 1806, and held this post till mid-1813. David Gelston had been collector since 1801; and these men virtually ruled the port.

[2] The records of these and most other cases mentioned in this article have been found in the manuscripts of the Federal District Court of New York. For access to this mountain of documents I am indebted to the officers in charge of them, and to the Work Projects Administration workers who cleaned them and reduced them to some sort of order. For funds which made possible their thorough examination I am indebted to the Rockefeller Foundation. Advertisements bearing on the suits have been traced through the files of the *American Citizen*, of New York City.

[3] Since four consignments were small, the proceeds would scarcely pay the costs of the case.

[4] W. W. Jennings, *The American Embargo, 1807-1809* (1921) and L. M. Sears, *Jefferson and the Embargo* (1927) do not mention it in either text or index.

bargo. Apart from three lapses, lasting in all for nineteen months, it governed the import side of American foreign trade from November 1806 to the outbreak of war in June 1812. Passed on April 18, 1806,[5] the act was to come into effect on November 15 of that year. On and after that date a ban was placed on the entry of a long list of British goods: all articles of which leather, silk, hemp, flax, tin (except in sheets), or brass was "the material of chief value," all woolen cloths "whose invoice prices shall exceed 5/- sterling per square yard," woolen hosiery of all kinds, window glass and glassware, silver and plated goods, paper, nails, spikes, hats, ready-made clothing, playing cards, beer, ale, and porter, pictures and prints.[6]

This list is as interesting in its omissions as in its inclusions. By it, Ireland's staple export, linen, bleached with American potash and made from flax grown from American seed, was completely shut out; four million pounds of nails and spikes, a quarter of a million gallons of malt liquor, most of Birmingham's brass and plated articles, all the medium and high-grade Yorkshire or West of England woolens, the Spitalfields silks and Midlands hosiery, the square miles of window glass, and the latest fashions in hats and shoes were excluded. But cotton piece goods were not shut out, nor were cheap woolens; iron and ironmongery could still enter, as could all kinds of crockery and earthenware, gunpowder and hairpowder, lead, painters' materials, drugs, steel, salt, and coal. Most of America's imports of these commodities came from Great Britain. British colonial produce was also unaffected.[7] The anger at British outrages on American ships was apparently tempered by a realization that many important commodities could not be obtained from other foreign sources or be made at home; and by postponing the day of doom till mid-November—or prescribing "a dose of chicken broth to be taken nine months hence," as the wisecracking Randolph of Roanoke remarked[8]—Congress allowed stocks to be replenished adequately

[5] Ninth Congress, Session I, Chap. 29.

[6] The penalties for infraction were loss of goods and a fine of thrice their value; also loss of the vessel and treble damages if the owner or master knowingly permitted banned goods to be loaded with intent to import.

[7] See *American State Papers, Commerce and Navigation,* I, 640-666, for Gallatin's analysis of Anglo-American commerce, 1802-1804; also the later tables in the same volume analyzing the source of American imports. About 400,000 bushels of coal and 40,000,000-60,000,000 lbs. of salt came as ballast from British ports each year. The quantity of red and white lead seems enough to give all the buildings from Charleston to Maine a coat of paint each year.

[8] Henry Adams, *History of the United States during the Administrations of Jefferson and Madison,* Book III, 175.

through the normal arrival of the fall fleet of merchantmen between August and the November deadline.

As that line drew near, British exporters grew worried. Would the act really be put into effect? To their question, Maury, American consul in Liverpool, could give no precise answer. "I usually say that I do not know what to advise, but that . . . the prevailing opinion here is in favour of the law being repealed next session, yet that in all vessels of my own employ I refuse any article prohibited by the law in question."[9] His caution was justified, for on the appointed day the law went into operation and the customs officers began to enforce it with vigor. In New York, Schenck seized a ship and 150 casks of nails on the very first day, and soon added boxes of linen and casks of porter to his collection. At Baltimore one zealous officer seized two pairs of British shoes *and* the ship in which they had arrived, while another asked Gallatin whether he should confiscate salt which came in sacks made of a prohibited material, flax.[10] The Portsmouth (N. H.) collector was besieged by merchants who stood "in high repute for fairness and punctuality," and who were distraught because prohibited goods ordered long ago had not yet arrived "because of delay or accident unforeseen." From every port "numerous applications" for remissions of penalties poured in on Gallatin.

To these he was soon able to reply that the president was recommending that Congress suspend the law, and that all seizures and pleas for mercy should be held up until the matter had been dealt with. On December 19, after five weeks' enforcement, the act was suspended till mid-1807; Jefferson was given power to suspend it further, but not beyond "the second Monday in December next," "if in his judgment the public interest should require it," and all penalties which had been incurred were remitted on payment of costs.[11] In March 1807, Jefferson prolonged the suspension to the prescribed limit.[12] Schenck and his fellow officers therefore returned to their normal tasks—collecting duties, paying drawbacks, punishing men who unloaded cargoes "between sunset and sunrise," detecting false entries or untrue invoices, seizing porter which came in

[9] Maury to Monroe, November 26, 1806 (Liverpool consular records, National Archives).

[10] The quotations from letters written by Gallatin to customs collectors or by them to him are taken from correspondence housed in the Treasury Archives, the National Archives, and the Custom Houses of Boston and Philadelphia. Since the documents are scattered and are not, in most instances, catalogued, it does not seem worth while to give detailed references.

[11] Ninth Congress, Session II, Chap. 1.

[12] Proclamation of March 24, 1807.

casks of less than forty gallons or in crates of less than six dozen bottles, and striving to maintain against all commercial experts the Congressional tenet that value and market price were synonymous.

II

The Non-Importation Act lay on the shelf for nearly a whole year, and during that time Congress failed to consider such amendments as would remedy the glaring "want of precision in describing articles"[13] which the brief period of enforcement had uncovered. Anglo-American merchants on both sides of the Atlantic either dismissed the law as one doomed to perpetual suspension or feared that all their business would soon be engulfed in war. The unconcern of the optimists was reflected in the letter of a Yorkshire merchant to an American customer in May 1807:[14]

> Such of our merchants who have resident partners on the other side, or from their connexions may be supposed to have the best information, are relaxing very little in sending out goods above the price limitted by the non-importation act, under the idea that it will certainly not be acted upon.

The concern of the pessimists grew intense when the news of the *Chesapeake* affair and of its effect on American temper reached England. American merchants residing in Liverpool—and they were a goodly colony—felt "great anxiety . . . as to the expediency of suspending their shipments of goods for America under the present state of affairs." The Liverpool American Chamber of Commerce, which probably had more American-born than native members, circulated an urgent warning to "the manufacturers and merchants of this kingdom" that the policy of their government was rushing Anglo-American amity and commerce into deadly peril.[15]

In the tension of that summer and fall the Non-Importation Act was forgotten, but as the "second Monday in December," which fortunately was as late as it could be—the fourteenth—drew near, newspapers began to remind their readers of the fact, and the merchants of Philadelphia, New York, and Boston awoke to a realization that non-importation was bound to hurt their business in general and interfere with cargoes that

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[13] Gallatin's report to House Committee on Commerce and Manufactures, December 5, 1807, *American State Papers, Commerce and Navigation,* I, No. 120.

[14] Letter, May 7, 1807, in manuscripts of Lupton firm, Leeds, England.

[15] Printed in the New York *Evening Post,* September 24, 1807. Professor R. G. Albion kindly allowed me to examine a microfilm of the minutes of the Chamber. For the best recent analysis of the diplomatic tangle and wrangle of these years, *see* A. L. Burt, *The United States, Great Britain, and British North America* (1940), Chaps. 11-13.

should even now be on their way across the Atlantic. In solemn assemblies they declared that the honor and independence of the nation must be supported, even if war was the only way of doing it; but enforcement of the Act of 1806 was not the best kind of support. In fact, repeal might be better strategy, by revealing "a disposition to be magnanimous" as well as by relieving importers from imminent embarrassment.[16] Congress showed, however, no intention of repealing, or even of suspending the act again; but it did belatedly recognize that the list of prohibited articles was defective in description, and asked Gallatin what should be done.

His reply was facetious, ironical, and almost contemptuous of the slipshod draftsmanship which characterized this, as well as most of the other, laws of the period of commercial restriction. You have given me, he said in effect, the task of administering a law so badly worded that it "will give rise to much perplexity and numerous suits." What am I to do with wrappers and containers made of prohibited materials? Hardware (free to enter) comes in paper, which is forbidden; cloths are enclosed in linen packages, boxes are held together with nails, *aqua fortis* comes in glass bottles, and salt arrives in linen bags which are worth more than the salt. Further, how am I to decide whether leather, silk, hemp, flax, tin, or brass is the "material of chief value"? What about mixtures such as pewter, bell-metal, tinned goods, gilt buttons? You exclude silverware and glass. Are silver watches silverware? Does the glass of a gold watch bar the entry of the watch? Are tacks and cobblers' brads nails, are cotton stockings ready-made clothing, are paper manufactures paper? Inquiries have already been made on these and other points, and more will doubtless come in, but I don't know how to answer them. "Therefore upon the whole it is desirable that the Act may not be carried into effect previous to a revision; for although no statute of this kind can, particularly at first, be altogether free from imperfections, yet the most obvious may easily be removed."[17]

This was not the last lecture of its kind Congress was to receive; but it was a good beginning, and Congress meekly responded. A supplementary clarifying bill was introduced; but the pressure of more important business, such as the hurried passage of the Embargo Act, delayed discussion, and it did not become law till February 27, 1808, ten weeks

[16] *See* reports of meetings, in *American Citizen,* November-December, 1807.

[17] Gallatin's report to the House of Representatives, Committee on Commerce and Manufactures, December 5, 1807. (*American State Papers, Commerce and Navigation,* I, No. 120.) In District, Circuit, and Supreme Court cases, the judges frequently scolded Congress for bad grammar, composition, and phraseology.

after the Act of 1806 had gone into effect. By that time many goods that had left British ports before December 14 had arrived and been seized; shipowners had asked whether vessels that cleared from American ports before December 14 would be allowed to bring banned goods back; and many more doubtful imports had appeared on invoices. The list of permitted imports was therefore lengthened; most of Gallatin's doubtful commodities were given the benefit of the doubt, thus making a partial non-importation decree still more restricted in scope. In addition, ships that had cleared before December 14 were allowed to return with any kind of cargo, provided they reached home within six months from a transatlantic port or within twelve months from one beyond the Cape of Good Hope.[18] Thus the operation of the act was virtually suspended again until June 14.

Not all the possible questions had been answered, and Gallatin was later called upon to decide whether such articles as pins, silver lace, and epaulets were on the black list.[19] But at least the law had been made sufficiently precise to be capable of smooth administration. At the same time the brief Embargo Act, which had been rushed through Congress in four days in December was rapidly amplified, expanded, and equipped with a bewildering array of rules, procedures, pains, and penalties.[20]

III

For the enforcement of these twin policies Gallatin had to rely largely on the faithful energy of his customs staff. Lincoln, a Revolutionary veteran, would do his best as collector in Boston, in spite of hostile public opinion and a lukewarm governor. In Philadelphia Shee bristled with enthusiasm, initiative, and suggestions. McCulloch of Baltimore was willing to work, but prone to excuse his shortcomings by pointing out that Chesapeake Bay was too large to be supervised without a fleet of gunboats or revenue cutters. The southern officials were reliable, except the collector in New Orleans, who continued to let ships depart for six weeks after he knew about the Embargo, on the ground that he had not received an official copy,[21] and who later absconded with nearly $100,000 of public money.[22]

[18] Tenth Congress, Session I, Chap. 25.

[19] Letters, Gallatin-Philadelphia collector, July 18, 1808; Philadelphia collector-Gallatin, May 4, 1809.

[20] By the Acts of January 9, March 12, and April 25, 1808.

[21] A. C. Clauder, *American Commerce as affected by the Wars of the French Revolution and Napoleon, 1793-1812* (1932), 136.

[22] *American State Papers, Finance,* II, 393-395.

Yet of all the ports New York was the most important. In the years 1801-1805, its Custom House had collected $12,900,000 in import duties out of a national total of $45,200,000, with Philadelphia a poor second, ($7,800,000) and Boston a worse third, ($6,400,000).[23] British exporters were increasingly concentrating their goods on New York as an entrepôt, from which imports were distributed by coastal vessels to New England and southern ports. In 1804-1805 it handled a fifth of the exports of domestic produce, and more than a quarter of the reëxport of foreign produce. Many coastal vessels ran regularly to the rice, tobacco, naval stores, and cotton ports; there was heavy traffic with New England and the West Indies; "regular traders" made their one or two round trips a year to France, England, Spain, and Holland, or their less frequent triangular journeys to the southern States, Europe, and back home; and an armada of free lances roamed hither and thither as occasion required. During the last six months of 1807—not perhaps a fair sample period—the shockingly incomplete shipping lists of the New York *Evening Post* show the following departures for foreign ports:

Destination	
British Isles	72
Continental Europe	120
Canary and neighboring islands	20
Maritimes and Newfoundland	69
West Indies	279
Central and South America	18
Asia	3
Total	581

During the period 790 vessels arrived from overseas, 131 of them from the British Isles. Only thirty-eight ships reached Philadelphia from the United Kingdom in that half year.[24]

The enforcement of the Non-Importation and Embargo Acts in New York was, therefore, a large and important task. Unfortunately, not a scrap of correspondence between the New York officers and the Treasury seems to have survived the fires of Manhattan and Washington, and we do not know what Schenck, Gelston, and Gallatin said to each other. But an almost complete set of district court records lets us see what Schenck

[23] *American State Papers, Finance,* II, 154.

[24] Compiled from photostat copy of arrivals at Philadelphia, 1789-1817, in Pennsylvania Historical Society Library, and New York Register of Arrivals.

did to enforce the will of Congress by pouncing on offenders wherever he could find them. During 1808, he seized nearly sixty consignments of prohibited goods arriving on a dozen ships, as well as twenty-eight vessels which had violated the Embargo. During 1809, he laid hands on fifty-five embargo-breakers, and wound up that phase of commercial restraint by catching five more in 1810. When Congress in March 1809 abandoned the complete embargo and partial non-importation, and substituted a complete ban on commercial intercourse with the French and British Empires, Schenck seized twenty intercoursers in 1809, and twenty-three in 1810. In May 1810 the non-intercourse policy was abandoned, but on February 2, 1811, that portion of it which shut British Empire ships and goods out of American ports was revived, and continued until the outbreak of the war or even beyond. Schenck therefore went to work again, made countless hauls of imports from the British Isles, British North America, and the British West Indies, and seized about forty vessels as well, before the outbreak of war opened up for him vistas of unprecedented opportunities. His total catch from 1806 to the middle of 1812 was at least three hundred consignments of goods, and not less than 170 vessels.[25] Philadelphia's record was only about twenty-five ships[26]—ten of them embargo-breakers; that of Charleston was no greater,[27] and while the court records of Baltimore and the New England ports have not yet been examined, the customs correspondence suggests that the number of seizures there was far less than that of New York.

Schenck's seizure of prohibited imports, begun in the last days of 1807, proceeded merrily during January and February 1808. Of sixteen ships arriving from British ports before the end of February, nine had banned goods aboard, and from them he collected sufficient glassware, linen, woolens, ready-made clothing, plated or brass articles, shoes, silk suspenders, and porter to stock a combined dry-goods store and tavern. But at this point he was, for the second time, halted in his stride; the supplementary act of February 27 suspended action till mid-June, and was retroactive. Consequently his whole haul was restored to its owners by court orders, and all penalties were remitted by the Treasury.

[25] Of eighty-three embargo-breakers seized by Schenck in 1808 and 1809, at least fifty were condemned and sold.

[26] List compiled from records in District Court, Philadelphia.

[27] The Charleston Admiralty and Federal District Court records and journals do not always state the nature of the offense.

IV

The Non-Importation Act was thus twice set in motion and twice stopped. When the wheels began to move again, their action was almost imperceptible. Between June 14 and the end of the year, Schenck seized goods on only five vessels, all on the ground that the ships had failed to return within the six months' period of grace. Yet at least a score of vessels arrived in New York from British ports during the second half of the year, including American vessels making tardy returns, and some British ships. Nearly all of them were heavily laden with British manufactures, but the goods had been carefully selected and were within the law. The advertisement columns are dotted with announcements of sales of cottons, cheap woolens, hardware, etc., and since books were not banned it was safe to announce "Just Received for Sale, *Marmion,* a Tale of Flodden Field, by Walter Scott, Esq." Schenck therefore concentrated his attention on the larger and more difficult task of enforcing the Embargo, and the Non-Importation Act had passed out of the New York picture by the end of 1808.

Elsewhere on the coast the customs officers seem to have done their best to enforce the limited and belated law. In April the Boston collector is perplexed by the arrival of manufactured goods from St. Bartholomew, a Swedish island. Gallatin[28] tells him that whenever he is convinced that goods coming from non-British islands are of British origin he must seize them; but let him be very sure of his ground, or he may lose the case and have to pay costs and even damages. In August, the Baltimore collector informs Gallatin[29] that a letter from Timothy Wiggin, the Manchester merchant, has fallen "officially in my way, in which I observed a remark to his correspondents here that quantities of prohibited goods were shipped by their merchants to Quebec, with an expectation to introduce them from that province into the United States." In October the Treasury circulated information received from "a respectable character lately returned from England," to the effect that "many merchants" in London were shipping forbidden goods. They were invoicing superfine broadcloths at less than 5/- a square yard, and concealing linen thread in rolls of muslin. "A sense of public duty will, without doubt, suggest to you the propriety and necessity of a faithful execution of the laws."[30]

[28] Gallatin-Lincoln, April 22, 1808.
[29] McCulloch-Gallatin, August 15, 1808.
[30] Printed circular to all collectors, October 1, 1808.

The Philadelphia officials were very alert, and with good reason. During 1808, thirty-three vessels arrived in their district from British ports; this was a little more than half the number for 1807, but it was nearly three quarters the annual average for the preceding five or ten years.[31] Of the thirty-three, twenty arrived after the law had come into real operation on June 14; their manifests reveal motley cargoes of textiles, hardware, cutlery, clothing, drugs and chemicals, furniture, tinplate, steel, white lead, books, shot, cheese, watches, and umbrellas. Evidently Philadelphia was not starved of British goods by the combined effect of embargo and non-importation. These imports had been chosen with one eye on the black list, but the customs officers searched them carefully to see that no forbidden merchandise slipped in. They never seem to have unearthed any serious sin, but occasionally found "a few articles that are forbidden." On principle, the collector insisted that these infractions "should not be overlooked, no matter how trivial, especially since there is provision for remission in the laws." Gallatin approved this inflexibility, even though the proceeds from the sale of convicted goods might not defray the costs of prosecution. "I do not perceive how we can avoid prosecuting in cases of infractions, . . . although the amount be small. Nor do I think myself authorized to remit forfeitures when there can be no doubt of their having been incurred, except in the manner pointed out by law, viz., on application of the party to the district judge in the usual way"[32]—an expensive procedure.

V

While Gallatin thus encouraged his men to do their duty, he had lost whatever belief he ever held in the value of the policy. In December[33] he told Congress that "the causes which induced the adoption of a partial Non-Importation Act have ceased to exist. The object then in view has merged in a far more important one. The selection of interdicted articles was founded on the possibility of obtaining them in other countries than England, and does not agree" with such changed circumstances as the Napoleonic control of Continental industrial areas, the Embargo which forbade American ships to fetch goods from those areas, and the British policy of interfering with them if they attempted a direct

[31] Arrivals in 1807 were fifty-nine; the average for 1798-1807 was forty-six.

[32] Graff-Gallatin, July 6, 1808; Steele-Gallatin, September 9, 1808; Gallatin-Steele, October 27, 1808.

[33] *American State Papers, Finance,* II, 309.

journey to a French-controlled port. Hence, "the Act, producing now no other effect than to increase the temptations and to produce habits of smuggling, impairs and injuries the revenue." Complete non-intercourse with Great Britain should replace the partial measure, and could be administered far more effectively; but a permanent increase of duties on articles "which may be manufactured in the United States would be preferable" to either partial non-importation or complete non-intercourse.

Gallatin stated only half the case when he referred to the increased temptations and habits of smuggling goods into the country. The Embargo had created a new temptation, to smuggle goods out. The fight against the latter has been well, but not completely, described by writers on the Embargo, and the general picture they have painted will probably only be amplified, rather than altered, by further research. The struggle against the smuggling of forbidden goods into the United States has not been studied, and records of the story are naturally scanty. There may have been some smuggling from the West Indies into New Orleans and the southeastern ports. Amelia Island, and St. Mary's River on the boundary between Georgia and Florida, may have been bases for inward as well as outward illicit traffic. Yet all the vessels seized on their return from embargo-breaking voyages to the West Indies are laden with molasses, sugar, and other island products, and none of them is caught with a bale of broadcloth.

In the north the story is different. British exports of manufactured goods to the Maritime Provinces and the St. Lawrence or Lake Ontario regions increased by a quarter during 1808, and a further two thirds in 1809.[34] With those areas there was the most active and the least repressible embargo-breaking, by sea to Nova Scotia or New Brunswick, and by raft, boat, cart, or sleigh from Maine, Vermont, and New York. The Embargo violations that found their way into court seem to have been chiefly one-way transactions; but there are evidences of imports as well. In July 1808, Gallatin wrote to at least two border collectors, urging them to be "on special guard," since he had heard that attempts were to be made to bring goods in from Canada;[35] but he had been writing such letters ever since the two laws came into operation, and smuggling had been a

[34] Official value of British produce exported to Canada and the Maritimes was £614,000 in 1807, £776,000 in 1808, and £1,285,000 in 1809 (*Parliamentary Papers,* 1816, No. 417; also House of Commons paper, May 24, 1819; copy in Canadian Archives).

[35] Gallatin to collectors at Presque Isle, and Michilimackinac, July 28, 1808 (Letters to small ports, vol. II, National Archives).

normal by-occupation ever since the border was created. Few officials had the courage, or even perhaps the wish, to grapple with offenders, many of whom were ready to use violence if need be. Naval vessels had to be sent to the Maine coast, and regulars to upstate New York, while courts capable of dealing with seized goods were far from the frontier points. Records of some seizures have been found; for instance, Schenck in December detected a small shipment of woolens worth over 5/- a square yard, which had slipped in with a load of plaster of paris (a permitted import) from New Brunswick; and in November the collector at Albany laid hands on a bale of smuggled cloth, which was condemned and sold for over $1,200. But the impression remains nevertheless that laissez faire prevailed on the northern border.

It would, however, be foolish to assume that smuggling nullified either of the two prohibitive aspects of Jefferson's policy. As always, it was the fringe of the shawl, a rather long fringe in places. But the smugglers could not develop enough resources in men or ships to take the place, or even a large part of the place, of the normal machinery of foreign trade. The ships and brigs which carried on the greater part of the transatlantic trade were in general tied up in obedience to the Embargo, or they went down the coast to load goods in readiness for the day when the light would change from red to green, and then returned to anchorage in their home ports. Maury in Liverpool was not distressed by the arrival of a single embargo-breaker until late November, and was relieved then to find it was really a British ship. No American offender arrived till January 1809, and very few American vessels appeared in other European ports during 1808. Such merchants' letter books as have survived show little effort to indulge in large-scale defiance of the Embargo, at least until the end of 1808, when patience was becoming exhausted and repeal seemed inevitable. So far as the western hemisphere was concerned, smuggling and embargo-breaking could not be prevented; but against Europe the Embargo was largely effective. And if American ships did not go to Europe, British goods could not be brought back in them.

In view of these considerations, the surprising feature of the period is the substantial quantity of British goods that did enter the United States, and did so legally, during 1808. The American returns of imports are not very helpful, since the years run from October 1 to the following September 30; hence the figures for 1807-1808 begin with thirteen or fourteen weeks of free traffic; and in addition they do not give the value of goods that paid specific duties. The British export returns are more

useful, since they deal with what are nearly calendar years.[36] According to them, the "official" value of British goods sent to the United States fell from £7,740,000 in 1807 to £3,930,000 in 1808, a decline of 49 per cent; the "real" value dropped from £11,850,000 to £5,240,000, or 55 per cent.[37] To keep half of the United States market would seem an amazing achievement, especially when we remember that virtually all British goods were normally brought into the United States in American vessels.[38]

Yet the explanation is not hard to find. By mid-June, when non-importation became effective, many American vessels that had left their home ports to winter in British harbors—a normal procedure even before threat of the Embargo made them and others scurry away in mid-December—had returned with unrestricted cargoes for the spring market. Some of these vessels usually made two round trips a year—westward, eastward, westward, eastward.[39] The Embargo prevented them from making their second, third, and fourth journeys, and thus they could not make their contribution of British goods to the fall market. But a considerable number of American vessels did not return home till after June 14,[40] and then came in with full cargoes of unobjectionable wares for the fall trade. On August 9, Maury wrote: "We still have American vessels for the United States, but the goods exporting thither prove so much beyond expectation that a sufficiency of American vessels could not be had, in consequence of which British [ships] are taken up and filling for various parts of the United States" at high freight rates.

This last sentence is a reminder that there was nothing in either the Embargo or Non-Importation Act to prevent British ships from bringing permitted goods; the only restriction on them was that they must leave American ports in ballast.[41] This reduced their earning power, and their owners probably decided that they would be better employed on more profitable Canadian or West Indian routes, or in serving that newly opened El Dorado for British exports, Brazil and the Spanish American colonies. There is nevertheless some evidence, in addition to Maury's

[36] From January 6 to the following January 5.

[37] *Parliamentary Papers,* 1812, No. 63.

[38] In 1806-1807, for example, $38,000,000 of British goods paying ad valorem duties were imported in American ships, and only $144,000 in British holds. *See* annual analyses in *American State Papers, Commerce and Navigation,* I.

[39] In 1807 at least nine vessels made two round trips between Philadelphia and England.

[40] At least twenty to Philadelphia, and at least the same number to New York.

[41] This provision was in the Embargo Act.

remark, that British vessels increased the quantity of goods carried lawfully by them to the United States.[42]

VI

By the end of 1808 it had become clear that partial non-importation was not proving fatal to British industry. Some branches of manufacture were being squeezed, but the pressure was not enough to make "the pips squeak," for escape was possible through increased exports to other parts of the western hemisphere. Meanwhile the Embargo was breaking down at the one point where it had been fairly effectively sustained. In every port, from New Orleans to Portland, scores of the larger ships were lying, crammed tight with American produce which they had either fetched from ports near the producing areas or had transshipped from coastal vessels. When Congress met in the fall, relief of some kind had been expected. Instead there came the ferocious amending act of January 9, 1809, which forced owners to unload their cargoes or give enormous bonds; and revenue officers came to seize sails, unship rudders, and place watchmen on wharves or decks. This was the last straw, and either directly or by subterfuge many ships made for the high seas. By the end of March, Maury had counted forty embargo-breakers in Liverpool,[43] and expected many more. New York and New Jersey ports were the chief points of escape, but Savannah ran them a close second, and all the chief harbors of New England, Virginia, and the Carolinas saw big birds fly away. It thus became evident that after a year's submission to the great, noble, grand, and sublime experiment, some shipowners and merchants in many places had suddenly and simultaneously decided to rebel.

All through the winter of 1808-1809 Congress was plagued by the question, "What next?" Plan One—partial non-importation—had ended without being given a fair trial. Plan Two—partial non-importation and complete embargo—had "promised so much and achieved so little"[44] that it was economically and politically doomed. Two other plans remained to be tried, with an interlude between them. Plan Three was complete non-

[42] For instance, the United States imports of British ad valorem goods in "foreign" ships crawled from $142,000 in 1806-1807 to $143,000 in 1807-1808, and jumped to $6,600,000 in 1808-1809. The carriage of iron, lead, and salt also increased. (*American State Papers, Commerce and Navigation,* I.)

[43] Maury's letters from November 26, 1808, to May 2, 1809, deal with the arrival of embargo-breakers, and with the embarrassment of the commission merchants to whom their cargoes were consigned.

[44] L. M. Sears, *op. cit.,* 29.

intercourse with the unrepentent belligerents, but free intercourse with the rest of the world.[45] American ships could go anywhere except to British and French ports, whether home, colonial, or controlled. American ports were completely closed to British and French ships and goods, even if the latter came in neutral vessels. Thus partial non-importation was supplanted by a complete ban on *all* British goods, on all British *colonial* produce, and on all imports from the French Empire or occupied areas; while British and French ships were shut out as well. But the plan was baited with a promise of forgiveness in return for the abandonment of decrees or Orders-in-Council so far as they violated the neutral commerce of the United States.

The bait and the limited freedom granted to American ships bedeviled the whole plan. When the Embargo was lifted on March 15, and the merchantmen swarmed out, bonded and cleared for a "permitted" foreign port, obscure names suddenly loomed large in the list of destinations. Gothenburg, Tonningen, and other Scandinavian ports burst into popularity, and St. Bartholomew was inundated with spring cruisers. But for New Yorkers the greatest discovery was Fayal in the Azores. Not a single vessel had gone there in the second half of 1807, yet between March 15 and June 9 seventy-nine ships, all heavily laden, solemnly set sail for Fayal. In these strange places, the Americans might transfer their cargoes to British ships; but many of them did not waste time in that way. By May, Maury was complaining that "the non-intercourse violators are now coming in, and like the embargo-breakers they never come near my office."[46] And by the end of 1809 most of the ships which had cleared for Fayal had returned from British ports. One of them was called *Madison,* another *Thomas Jefferson.*

Their return from British ports with British cargoes was made possible by the bait offered in the Non-Intercourse Act. In mid-April Erskine, British Ambassador in Washington, and Smith, the Secretary of State, reached an agreement, involving the abandonment of the Orders-in-Council so far as American ships were concerned. Thereupon Madison on April 19 proclaimed the end of non-intercourse with Britain on June 10, while Congress in June decreed that British ships and goods which had come in after full non-importation went into effect (May 20) were to be released from seizure and forfeiture.[47] For the third time Schenck's seizures were restored. Hence many ships which cleared for permitted

[45] *Tenth Congress, Session II,* Chap. 24. Signed March 1, 1809.
[46] Maury to Pinckney, May 25, 1809.
[47] *Eleventh Congress, Session I,* Chap. 9. Signed June 28, 1809.

ports between April 19 and June 10 really intended to hover off the British coast and enter port on the tenth. Fifty of them came to anchor in Liverpool on the eleventh, and nearly as many during the next week. Fayal and Gothenburg were forgotten, and not a single vessel cleared New York for Fayal between June 10 and August 9.

Anglo-American trade boomed under that new deal. But that deal ended when in late July America heard that Canning had repudiated Erskine's agreement. On August 9, Madison declared non-intercourse was revived; but it was impossible to make this declaration effective at once. Ships that were in British ports or were bound there had to be permitted to come home laden with British goods, provided they used "all due diligence in returning." During the last four months of 1809, thirty-six ships reached Philadelphia from Britain; over a hundred arrivals in New York were recorded by the *Evening Post*. Hence America received an enormous supply of British wares during the fall; the "official" value of British exports to the United States rose nearly thirty per cent above the low level of 1808, and was about two thirds the pre-embargo figure. The "real" value rose nearly forty per cent, and was also two thirds that of 1807. The full effect of non-importation could not be seen until the spring of 1810, but on May 1 of that year non-intercourse expired. In his letters to collectors and his reports to Congress, Gallatin conveys his impression that smuggling from the north was more active than ever. The exports of British produce to Canada and the Maritimes jumped from £770,000 in 1808 to £1,272,000 in 1809.

VII

On May 1, 1810, the interlude began when Congress let non-intercourse lapse, but threatened to revive part of it against either of the belligerents which did not follow suit if and when its enemy revoked the decrees or orders hurting American shipping.[48] Napoleon promptly bamboozled Madison with a false declaration of the repeal of the obnoxious decrees. The news reached America in late September.[49] Madison "declared" the repeal by a proclamation on November 2, 1810, and gave Great Britain three months in which to revoke her Orders-in-Council. Since she did not do so, she was subjected to a new brand of punishment on February 2, 1811. Business between May and the arrival of the French news was as buoyant in tone as in the days of the Erskine honey-

[48] *Eleventh Congress, Session II*, Chap. 39. Signed May 1, 1810.
[49] *Evening Post*, September 22, 1810.

moon in mid-1809. The open markets of the United States cheered the British, who were under a depressed aftermath of the South American boom of 1808-1809. The end of furtive contact with Britain cheered the Americans, who were also feeling the consequences of the British commercial collapse. Exports and imports, departures and arrivals, all climbed rapidly and drew near to those of 1807. American merchants mailed large orders to England, or went across to purchase goods on the spot. Britons swarmed to the United States to reëstablish or strengthen contacts, to pay or collect debts, or to settle down as members of one of the colonies of Scots, Lancashiremen, or Yorkshiremen that infested lower Manhattan.

This commercial convalescence was checked by the news from France and the President's proclamation; and as the months went by the lack of nourishing news from London caused a severe relapse. On February 2, 1811, Plan Four came into action. The new policy was not the old non-intercourse of 1809, but only half of it. By reviving nine clauses[50] of the law of March 1, 1809, Congress forbade the entry of all British Empire ships and goods; but by leaving the other nine on the scrap heap it left American ships and goods free to go to Britain. It was thus at last a simple, complete, non-importation policy. Britain could buy, but not sell. She could import American produce in American ships, but not in British bottoms. She could not send her goods to America, even in American vessels, and no neutrals could bring them as their own property. Even Napoleon could not devise a better plan for sapping an enemy's commercial and financial resources. The price for salvation was the repeal of the Orders-in-Council; once Madison heard that this had been done, he would proclaim the fact and the restrictions would immediately "cease and be discontinued."

This brand of non-importation lasted longer than any of its double-edged predecessors, and remained in force until war made British goods enemy products. It began with the usual muddle. Schenck and his fellow officers seized great quantities of goods which arrived soon after February 2, but Congress again belatedly provided a period of grace, and for the fourth time Schenck saw his efforts undone. Yet only a small fraction of the vast orders placed in 1810 had cleared British ports by February 2, and Congress would not allow the remainder to come in. Some British manufacturers or merchants had, on their own initiative, suspended the filling of these orders when they heard of the President's

[50] Sections 3-10 and 18.

proclamation, while some American cancellations or suspensions had got through in time to hold up production or purchase. But great quantities of manufactures had been finished, packed, paid for, and dispatched to the ports in readiness for the spring sailings, and there they lay till the summer of 1812.[51] To that mountain of bales, bundles, trusses, boxes, and crates, more were added during 1811 and early 1812 by Americans who thought they could discern a break in the clouds and were convinced that either Congress or the British Cabinet was going to relent. In addition, substantial orders were sent to every part of industrial Britain, to be filled as soon as there were certain signs that the Orders-in-Council were doomed. William Brown, a leading Anglo-American merchant, said that he had £100,000 of goods in his warehouse in the spring of 1812, and there were probably half a dozen firms that could have made the same statement.

To this heap of American goods, most of them bought and paid for, was added a rising pile of American credits from the sale of produce in England and on the Continent. The normal course of American transactions was to have most of the proceeds of sales on the Continent transferred to England, there to be drawn on for the purchase of British manufactures.[52] Between 1805 and 1807 Great Britain sold two to three times as much to the United States as she bought from her. The most popular argument against the Orders-in-Council was that if Britain hindered the American sales to the Continent she would reduce this transfer of funds and thus impede the purchase of British industrial products. And a forceful but futile argument against Non-Importation was that if Americans could not buy from England they would not be able to repatriate the income they earned by selling on the Continent or in Britain, not to mention their shipping earnings.

During 1811 and early 1812 American exporters tried various makeshift ways of getting their property home. Some of them instructed their British agents to buy "stocks of the United States," Louisiana 6 per cents, securities of the liquidating first Bank of the United States, or any other kind of American bond that could be bought in London or Amsterdam. Some asked for bills or drafts, even though the price was high and the loss great. One shipowner wound up complicated instructions to his

[51] This phase of the story is revealed in a mass of business letters, invoices, petitions, etc., submitted as evidence in trials of cases arising from the seizure of goods after war was declared. They are in the New York District Court records.

[52] Stephen Girard claimed that in 1809-1811 about £280,000 was sent for him by the Hopes of Amsterdam to Barings in London. (*American State Papers, Finance,* II, 640-642.)

captain as follows: "If thou learn salt can be had at Cape de Verdes we think thee had best take specie enough with thee from England and proceed there and take a cargo for home." But bills and bonds, salt and specie, all were poor and inadequate substitutes for dry goods, pottery, and hardware. For their westward passages most vessels tried to earn a little money by fostering passenger traffic; but their holds were not even allowed to be filled with salable ballast, since coal and salt from Britain were forbidden entry.[53] Gallatin's men were working hard, Schenck was in grand fighting form, and the Philadelphia collector was so strict that he hesitated long before allowing Irish immigrants to bring ashore their unconsumed stores of potatoes and oatmeal.[54]

Smuggling played its part. Hezekiah Niles, never an expert in understatement, said that the Non-Importation Act was so ineffective that it should be called "An Act for the Better Encouragement of Roguery and Other Purposes."[55] Gallatin admitted that some British rum and other commodities were coming in from non-British islands, and it was difficult to prove that it was British rum, even by calling experts into court to taste it. He agreed that prohibited goods were slipping in by sea and land from the north; but the whole situation was not serious.[56] The evidence suggests that he was too complacent. The expanded British exports to Canada, the increased number of smugglers caught on the border, and information sent by the consul from London all indicate increased illicit activity. Many firms wished to have stocks of goods as near home as possible when surrender by Cabinet or Congress came. To have bales ready in Liverpool, Bristol, or London was wise; but to have them in Montreal, Quebec, Halifax, or Amelia Island was wiser. Washington Irving's firm quietly accumulated 150 casks of hardware and glass in Montreal during the fall of 1811. John Jacob Astor built up a rich store of Canadian furs at St. Regis, a border point. Stephen Girard and his associates landed three cargoes, worth at least $350,000, on Amelia Island during the winter of 1811-1812. If others built up such stocks, and then let some of them slip into the United States in anticipation of commercial emancipation, no one would be surprised, least of all Gallatin.

All these and similar devices could not make much impression on the mountain of goods in store or on order. The only way to break the dam was to force a political surrender in one of the two capitals. In January

[53] Gallatin to Boston collector, January 16, 1811.
[54] Steele to Gallatin, July 10, 1811.
[55] *Niles' Weekly Register*, October 26, 1811.
[56] *American State Papers, Commerce and Navigation*, I, No. 164.

1812, there were faint signs that Congress might relent so far as to allow Americans to bring in the goods they had *ordered* before February 2, 1811. Ships rushed eastward to gather them up, and Merseyside came to hectic life. But the signs faded away, and the war of nerves continued. More ships went to England to escape the Embargo imposed by Congress on April 4, 1812.[57] Their arrival was an ominous indication of the temper in Washington. War must be coming, and only a revocation of the Orders-in-Council could save the day. To that end British manufacturers and merchants interested in the American market had already redoubled their efforts. This time they succeeded, and when the *London Gazette* of June 23 announced their victory they rushed into action with exuberance and zest. To each American customer every British exporter sent a letter, a circular, or a copy of the *Gazette*. Here is a typical one.

Sheffield, June 24, 1812.

Sir,

We have the pleasure to inform you that yesterday our Government issued a Declaration by which the British Orders-in-Council, so far as they regard the United States of America, stand revoked on the First Day of August next; and as the Non-Importation Law will then cease to operate, the Trade between the two Countries will be once more free from all obstructions.

We sincerely congratulate you on this happy event, and beg leave to assure you that every exertion in our power shall be made to forward the whole of your orders to Liverpool for Shipment, with the utmost possible dispatch.

We are, most respectfully,
Sir,
Your obliged Friends and Servants,
BAILEY, EADON & BAILEY.

The movement started by the revocation of the Orders gained speed and mass for three weeks before any hint of serious obstacles arrived from America, and official notification of the declaration of war did not arrive in England till the end of July. But even then there was no power, and certainly no will, to check the outrush of ships and goods. By the time the exports really petered out about the end of 1812, goods estimated to be worth £4,000,000 or nearly $20,000,000 had left British ports for the United States. Some of them had rushed into the arms of privateers or American warships. Some of them had eluded capture and arrived safely in port. There they had found that Non-Importation, un-

[57] Seventy arrived in Liverpool during May. Hence there was a large fleet there when the Orders-in-Council were revoked in June.

repealed, was in full operation. If, as most of them did, they went into New York, they met Peter A. Schenck, working harder and seizing more than ever. For the fifth time he was on the job. And for the fifth time most of his victims were released from his grasp. How and why is another story.

University of Minnesota HERBERT HEATON

Interstate Redistribution of Population, 1850-1940

I

SINCE this country attained approximately its present continental boundaries nearly a century ago,[1] vast shifts have occurred in the geographical pattern of its population. Immigration from abroad contributed many millions to the overall increase of more than 100,000,000 during the period 1850-1940; domestic migration carried settlement westward; and natural increase of the populations of different areas at differing ratios contributed a substantial but unmeasured element to geographical redistribution.

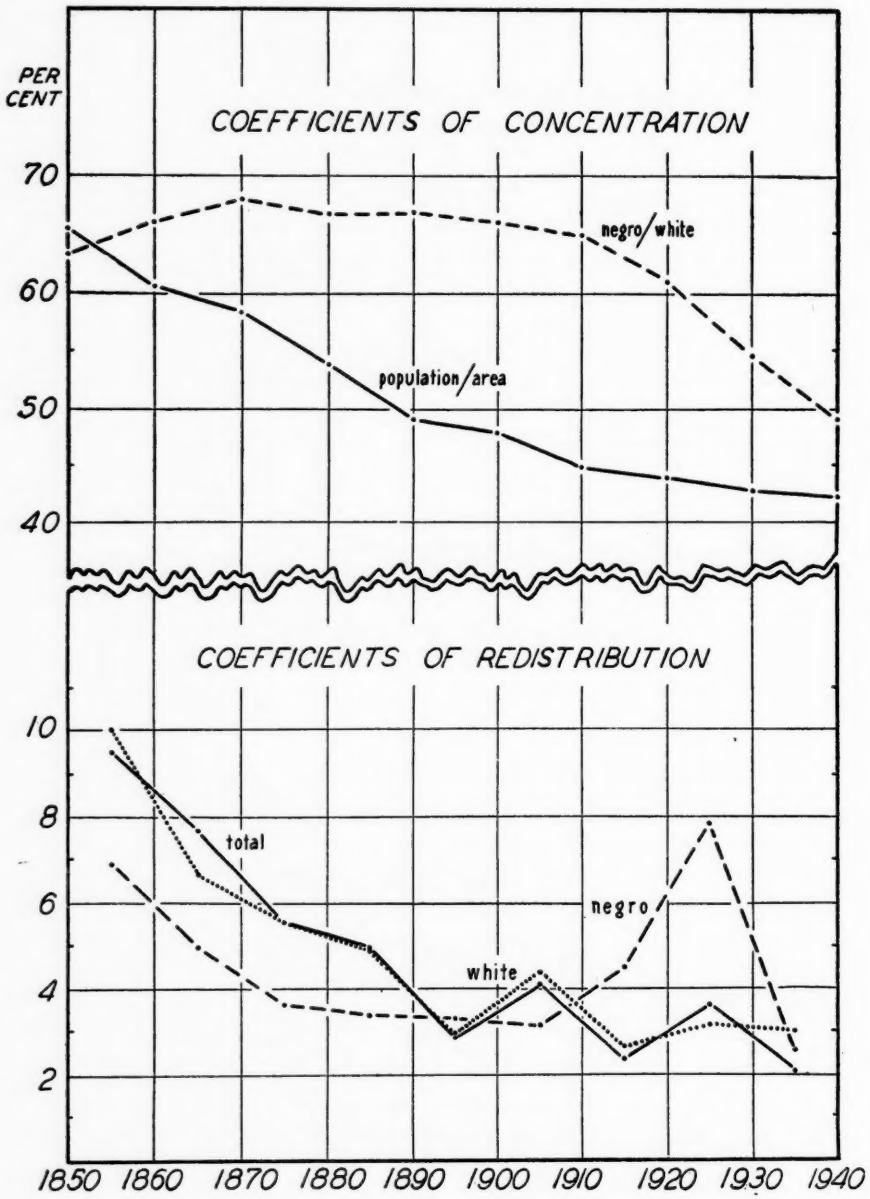
This paper, utilizing census data only, offers answers to some important questions regarding the shift in our population pattern during the last ninety years:

1. Has the population of the United States come to be more evenly or less evenly distributed over the land area?
2. Has the redistribution of population proceeded at an accelerating, uniform, or slackening rate?
3. During which decades was there a particularly large degree of redistribution, and during which other decades was the geographic pattern of population relatively stable?
4. Has the Negro population shown a more or a less rapid rate of redistribution than the white population?
5. As a result of the redistribution of both races, has the geographic pattern of Negro population come to resemble more closely or less closely that of the white population?

The method employed to answer these questions is a simple one, involving the use of percentage breakdowns of national population totals by States. If two such breakdowns (applying, let us say, to two different census years) are put side by side, and the plus or minus difference calculated for each State, the sum of all the plus differences (or the sum of all the minus differences, which is of course equal) constitutes a measure of the degree of dissimilarity between the two distributions. This measure varies between the theoretical limits of zero and 100 per cent.[2]

[1] The only substantial change in area since the Mexican War settlement was the Gadsden Purchase of 1853, which contributed a little less than one per cent in area and practically no population.

[2] See footnote on page 200.



[2] This procedure has already been used by P. Sargant Florence and Arthur J. Wensley in measuring the degree of localization of individual manufacturing industries in Great Britain (see Political and Economic Planning [PEP], *The Location of Industry in Great Britain* [London, 1939, Appendix II]), and has been applied by Professor Florence to American data in a forthcoming study of Industrial Location and National Policy by the National Resources Planning Board. Some other measures applicable

It will be evident that this method of summation of differences of percentage shares can be used to compare *any* two distributions subject to a common unit of classification. Thus the distribution of the total area of the United States among the States may be compared with the distribution of the total population among the States, and the resulting coefficient will show the degree of areal inequality of distribution of population among States.[3]

In addition to the comparison of two distributions of the same date, the method lends itself to a comparison of the same distribution at two different dates, thus showing the net shift or redistribution occurring between the two dates. Such a "redistribution coefficient" does not attempt, of course, to measure either migration or mobility. No adequate statistics exist for the accurate estimation of either of these, save in quite recent years; nor is it possible to trace accurately the effects of differential fertility and mortality upon redistribution. For these reasons, and because for many practical purposes the net total result of birth-death differentials and migration is the important thing, the measurement of redistribution seems worthy of serious attention.

II

Consideration may now be given to the results obtainable by applying this procedure to actual census data. The first question asked had reference to the degree of areal concentration of the population of the United States. Table 1 and the chart show the calculated value of the coefficient for each census year since 1850. The consistent fall in the coefficient, extending over the entire period, indicates the continued spreading of the population more and more evenly over the land area, with more nearly uniform density in different States. The fact that this represents mainly the settlement of new areas is shown by the flattening out corresponding to the gradual "disappearance of the frontiers." The smoothness of the trend is rather remarkable, but two important retardations (1860-1870 and 1890-1900) would invite closer analysis.

to the purpose here in hand are discussed in John K. Wright, "Some Measures of Distributions," in *Annals of the Association of American Geographers,* December, 1937, and in my article, "The Measurement of Industrial Localization," in *Review of Economic Statistics,* November, 1936.

[3] Possibly an illuminating way of interpreting this coefficient is to say that it indicates what percentage of the total population would have to move across State lines in order to make the average density of population the same in all States.

TABLE 1. COEFFICIENT OF CONCENTRATION OF POPULATION RELATIVE TO AREA, 1850-1940

Census Year	*Coefficient (percentage)*	*Census Year*	*Coefficient (percentage)*
1850	65.7	1900	48.0
1860	60.7	1910	44.8
1870	58.6	1920	43.8
1880	53.8	1930	42.7
1890	49.1	1940	42.1

Calculated from data in United States Census of Population and in *Statistical Abstract*, 1938. Allowance is made for the Gadsden Purchase in 1853 and for the following changes between 1860 and 1870: North Dakota and South Dakota separately reported, replacing Dakota Territory; West Virginia separated from Virginia. Oklahoma and Indian Territory have been combined throughout.

The second question posed (the rate of redistribution of population during different decades) is answered in Table 2 and the chart by means of intercensal coefficients of redistribution. Plainly there has been a tremendous decrease in the redistribution rate, which must be explained in large part by the declining relative importance of interstate migration. It may come as a surprise that the use of the automobile has failed to arrest the decline of redistribution.

The same tapering off of decline is noticeable here as in the coefficient of areal concentration. However, conspicuous reversals are present as well. Since 1890, the redistribution rate has shown alternate increases and decreases by decades, although the underlying downward trend is still strongly in evidence. Varying levels of industrial employment in the different decades, together with variations in immigration closely associated with these cyclical changes, are probably responsible for a good share of the zigzagging that took place after 1890. The high redistribution rates for the decades 1900-1910 and 1920-1930 are due mainly to unusually large increases in the States listed below:

1900-1910: New York, New Jersey, Oklahoma, Washington, Oregon, California

1920-1930: New York, New Jersey, Michigan, California

Still another effective application of the coefficients of redistribution and concentration can be made by considering separately the white and Negro populations. At the outset of this paper, the question was posed as to which group has shown the more rapid rate of redistribution. The general impression hitherto gained from historical information and

meager statistics is that interregional migration of the Negro population has increased in recent decades.

The results of the present measurement, as shown in Table 2 and the chart, substantiate this impression and at the same time give it more precise quantitative content. As compared with the redistribution rate for the white population, the Negro redistribution rate shows a radically different trend.[4] During the Civil War and Reconstruction decades there

TABLE 2. COEFFICIENT OF INTERCENSAL REDISTRIBUTION FOR TOTAL POPULATION AND FOR WHITE AND NEGRO POPULATION SEPARATELY, 1850-1940

Decade	*Coefficient (percentage)*		
	Total	*White*	*Negro*
1850-1860	9.50	10.00	6.92
1860-1870	7.69	6.68	4.97
1870-1880	5.60	5.60	3.68
1880-1890	4.95	4.91	3.40
1890-1900	2.90	2.92	3.25
1900-1910	4.10	4.40	3.12
1910-1920	2.40	2.66	4.46
1920-1930	3.65	3.13	7.82
1930-1940	2.05	2.97	2.60

Calculated from data in United States Census of Population. See note to Table 1 for boundary changes for which adjustment has been made. Mexicans are included in the white population from 1930 on. The 1930-1940 results are based on 1940 census tabulations of a 5 per cent sample, classifying the population merely as "white" and "nonwhite." It is unlikely that any of these deficiencies in the data significantly affect the results.

was, as one might have expected, much less redistribution of Negroes than of whites. By about 1880, however, the gap was beginning to close; and around the turn of the century the redistribution of whites and Negroes was proceeding at about equal rates.

The great rise in the white redistribution rate in the decade 1900-1910 is entirely missing from the Negro rate, which suggests that it represents in large part the flocking of foreign white immigrants into northern industrial centers and white migration from the Midwest to the Pacific and Mountain States.

[4] It will be noted that the coefficient for the total population is by no means always intermediate in value between that for the whites and that for the Negroes. The relation depends upon the direction and amount of correlation between the shifts of the Negro and white groups.

The most spectacular feature of the Negro redistribution rate is its rapid rise during the period 1910-1930. While the redistribution of the white population, and that of the population as a whole, continued its downward trend, that of Negroes rose from a low of 3.12 per cent in the decade 1900-1910 to 7.82 per cent in 1920-1930, the highest rate during the period covered.

This great rise in Negro redistribution denoted primarily an increased degree of mobility. The bulk of migration was to the northern industrial centers, as is indicated by the following listing of the States showing the largest increases and the largest decreases in Negro population between 1920 and 1930:

Largest increases: New York, Illinois, Pennsylvania, Michigan, Ohio, New Jersey

Largest decreases: Georgia, South Carolina, Virginia, Alabama, Arkansas, Mississippi

In the last decade, 1930-1940, the Negro redistribution rate fell to the lowest figure recorded for the entire period (2.60 per cent). This would seem to indicate that the great northward flow of the 1920's was neither maintained nor reversed in any substantial proportions.

The last question dealt with is the degree of deviation between the geographic distributions of the white and Negro populations. There is a general impression that as a result of the northward redistribution of Negroes during the past generation, the two races have come to be rather more evenly distributed in relation to each other. A trend of this sort, if it exists, is of course important in connection with a wide range of economic and social problems that may be raised or alleviated.

By calculating a coefficient of deviation between the distributions of the two populations, for each census year since 1850, it is easy to show the trend, as given by the figures in Table 3 and the chart. The curve is quite smooth and the basic directions of change stand out unmistakably. Prior to the Civil War, when the most active new settlement was being carried on by whites, the disparity of geographic distribution between whites and Negroes increased; it reached a peak of 68.1 per cent in 1870. Thus in 1870 it would have been necessary to shift across State lines more than 68 per cent of one race or the other in order to make the distribution of the two races the same.

The Civil War definitely checked this trend of increasing deviation, and a slight geographic *rapprochement* of the two races is in evidence over the period 1870-1890. From then on, the deviation diminished more

and more rapidly as the Negroes became increasingly mobile and moved northward. By 1940 the percentage deviation was less than 50 and it was apparently still decreasing rapidly. Should the trend of 1910-1940 continue another century, the interstate distribution of the two races would be the same. This is not to suggest that such an equalization is ever likely to occur, but the steepness and persistence of the trend deserve emphasis.

TABLE 3. COEFFICIENT OF DEVIATION BETWEEN DISTRIBUTIONS OF NEGRO AND WHITE POPULATION, 1850-1940

Census Year	*Coefficient (percentage)*	*Census Year*	*Coefficient (percentage)*
1850	63.3	1900	66.2
1860	66.1	1910	65.0
1870	68.1	1920	60.9
1880	67.1	1930	54.6
1890	67.2	1940	49.1

Calculated from data in United States Census of Population. See note to Tables 1 and 2, above, for description of adjustments for boundary changes, and discrepancies between 1940 and earlier data.

III

The applications here presented will suffice to indicate the type of question to which this simple statistical analysis may be directed. Further variations can be introduced as needed—for instance, the county may be substituted for the State as the geographical unit if it be desired to emphasize shorter distance shifts or deviations. Subdividing the unit of classification raises the value of all the coefficients; consequently, coefficients based on different units of classification cannot be compared.

University of Michigan EDGAR M. HOOVER, JR.

Business Cycles, Harvests, and Politics: 1790-1850[1]

You cannot get them to talk of politics when they are well employed.—William Mathews, 1833.

I have observed during the whole time I have been in Lanarkshire that any rise in the rate of discount at the Bank of England has been immediately, or at least shortly, followed by an increase both of crime and of civil suits, and if it continues long, of mortality and typhus fever. So much so, that, as I am an official member of the prison board and of most of the Charities, I have always made it a rule to say . . . "Gentlemen, the Bank of England have raised their discounts, you had better immediately take measures for enlarging the prison accommodations and for extending the infirmaries and Poor houses."—A. Alison, Sheriff of Lanarkshire, 1848.

I

HISTORIANS of every shade of bias admit the importance of the influence of economic situations on political and social events. The weight attached to economic factors or, more precisely, the mechanism of their action is, however, by no means settled. The most familiar relation that has hitherto been emphasized in the years 1790-1850 links the mechanical inventions of the late eighteenth century to the growth of the factory system and to the consequent rise of a large urban proletariat and a powerful middle class. From these relations, which are essentially sociological, efforts have been made to explain the political forces that produced the Reform Bill of 1832, the Chartist Movement, the repeal of the Corn Laws. In the realm of cultural history, the rise to dominance of a philosophy of individualism and a cult of romanticism have been linked to the same forces, with ramifications in economic doctrine, religion, architecture, and poetry. Lectures on "The Industrial Revolution" may well be a part of courses on the romantic poets or on British foreign policy. Such attempts at interconnection represent a long-run analysis of economic influences. For many purposes, especially where economic influences operate at several removes, that sort of generalization is adequate.

The experiences of the western world since 1918 and, more especially, since 1929 have impressed observers, however, with the tremendous im-

[1] This article is an outgrowth of work done by the author on the study of "The Growth and Fluctuations of the British Economy, 1790-1850," under the direction of Dr. Arthur D. Gayer.

pact of short-period economic forces. Changes in social structure, in political atmosphere and policy, and in intellectual attitudes can be more or less directly traced to the depression after 1929. While it is true that these trends (and the causes of depression as well) have a long history, reaching back, at least, to 1873, their timing, their intensity, and their unique character are closely connected with recent short-run developments. Many historians have taken account of this type of influence, but rarely systematically.[2]

From 1790 to 1850 there were at least three major economic forces that contributed, at intervals, to British social and political unrest: cyclical unemployment, fluctuations in domestic harvests, and technological unemployment. The latter, by itself, was not likely to produce major disturbances; nor can it be sharply distinguished from cyclical unemployment. The underemployment of hand-loom weavers was, admittedly, an important element in the Luddite and Chartist movements; and the resentment of the hand-loom weavers against the introduction of machinery often gave a peculiar character to the activity of wider groups. The most serious unrest, however, was a product of cyclical depression and high food prices.

II

Good harvests with resulting low grain prices were calculated to call forth complaint from the landholders and from tenants burdened with fixed rent payments. The demand for grain was sufficiently inelastic to bring a decline in gross income when good harvests caused a sharp fall in price; and, until 1832 at least, the agrarian interest was disproportionately represented in Parliament. The simplest short-period, economic-political relation is that between the wheat price and the Corn Laws.

The Corn Laws were altered principally in the following years: 1791, 1804, 1815, 1822, 1828, 1842. Repeal came, of course, in 1846. A glance at the annual average wheat price reveals the principal setting for these amendments.

The wheat price fell from 56s. per quarter in May 1790 to 42s. in October 1791. The movement continued to a low point of 37.0s. in May 1792. The harvest of 1791 was "one of great abundance" and, under the

[2] Of the studies covering the first half of the nineteenth century G. D. H. Cole's *Short History of the British Working Class Movement, 1789-1927,* makes perhaps the most consistent use of a framework of business fluctuations and price movements. See, for example, I, 79, 88, 105, 177-188. But in describing strikes, and even phases of political development, many opportunities for relating the data to short-period fluctuations are missed.

prevailing corn law, the fall in price was sufficient to cause the ports to be closed to foreign grain:[3] "but the low price was productive, as usual, of complaint on the part of the landed interest, and was the occasion of a fresh corn bill." The inadequate harvests of the following years, however, kept the wheat price at or above 50s., and the Act of 1791 was not called into operation.

The catastrophic fall in the wheat price, from 154s. per quarter in March 1801 to 50s. in February 1804, produced similar, though even more violent complaint. The Corn Laws were again modified. The area under cultivation had, of course, been greatly expanded between 1793 and 1804. A succession of abundant harvests brought forth an unparalleled supply of wheat.[4] The import limit was raised to 63s.[5] The cutting off of Baltic supplies resulting from the resumption of war, together with bad harvests kept the wheat price above the new minimum until 1815. Like the Act of 1791, that of 1804 was never operative.

From August 1812, when the wheat price was 152s., to January 1816 a steady decline took place. The break-up of the Continental System and, finally, the return to peace, as well as good harvests, caused this fall.[6] Despite considerable opposition[7] it was judged that only an 80s. import limit could protect the capital newly invested in agriculture.

Until the close of 1818 the wheat price remained above 80s., aided largely by inadequate harvests on the Continent and considerable exports from Britain to France.[8] But good harvests then brought on a decline to 39s. at the close of 1822. The period of severe agricultural distress has colored the whole view of British agriculture in the three decades after the Napoleonic Wars.[9] In 1822, however, the Government was trapped

[3] T. Tooke, *A History of Prices* (1838), I, 81. This act provided for a duty of 24s. 3d. if the price was under 50s.; 2s. 6d. at or above 50s. and under 54s.; 6d. at or above 54s., and a bounty of 5s. on exports at a price under 44s. *See also* W. Smart, *Economic Annals of the Nineteenth Century* (1917), I, 90-92; and D. Macpherson, *Annals of Commerce* (1805), IV, 219-220.

[4] T.Tooke, *A History of Prices* (1838), I, 237-239.

[5] Under the Corn Law of 1804 a duty of 24s. 3d. per quarter was imposed when the wheat price was under 63s.; and 2s. 6d. per quarter, when at or above that rate and under 66s.; and 6d. when above 66s. The lowest price reached between 1804 and 1815 was 66s., in November 1807.

[6] Tooke, *op. cit.*, I, 322-325; II, 2-4; also *Annual Register*, 1814, 219.

[7] T. Doubleday, *A Financial History of England* (1859), 227, notes that the protection of soldiers was required for members of the House of Commons, on the passage of the 1815 Corn Law, such was "the fury of the people."

[8] Tooke, *op. cit.*, II, 16-18.

[9] For a modification of the traditional view of unrelieved depression, see G. E. Fussell and M. Compton, "Agricultural Adjustments after the Napoleonic Wars," *Economic History*, February 1939.

between the farmers' petitions and the opposition to further protection from labor, commercial, and industrial interests. At Peterloo, three years before, "No Corn Laws" had appeared on the banners. Unlike the position in 1815 the decline in agricultural prices (1818-1822) was accompanied by a decline in import prices and nonagricultural domestic prices. The Corn Law of 1822 modified only slightly the terms of the Act of 1815.[10] "The farmers had asked for bread and gotten a stone"; but there were others, too, asking for bread between 1818 and 1822.

From the second quarter of 1823 to the last quarter of 1828 the price of wheat hovered between 50s. and 70s. per quarter. Although the farmers were far from content, their relative position was, with respect to profits, probably no worse than that of the manufacturer or exporter; after the crisis of 1825, in fact, it was probably better. And those who sought a reduction in agricultural protection were victorious in the Corn Law of 1828.[11] It is probable that the growing prestige of free-trade ideas and the parliamentary influence of industrial and mercantile groups played some part in moderating the 1815 bill.[12] There was, however, an immediate economic basis reflected crudely in the movement of relative prices in the twenties:[13]

	Domestic Price Index	*Import Price Index*	*Wheat Price* (s. per quarter)
1823	97	99	52
1827	106	82	56

It is clear that, from 1823 to 1827, the wheat price did not share the net fall experienced in most other markets. After 1825, a peak year in general prosperity, this disparity was especially felt; and it was in the post-crisis atmosphere that antagonism to the Corn Law of 1815 developed.[14]

[10] *See* Smart, II, 117-118, for a detailed account of this bill which, like those of 1791 and 1804, was never really operative. A feature of its terms was the application of a sliding scale of duties when the price rose above 70s.

[11] Smart, *op. cit.*, II, 439. The sliding scale introduced in 1828, after two years of controversy, ranged from a duty of 34s. 8d. when the home price was 52s., to 1s., when the home price was 73s. In fact this amounted to only a very slight modification on the preceding bill, although the trend against agricultural protection had clearly set in.

[12] Their long-term pressures were symbolized, perhaps, in the person of William Huskisson.

[13] Nonagricultural domestic commodities show, on the whole, a greater net decline than the domestic index, which includes wheat and a variety of other agricultural commodities heavily weighted.

[14] *See* Tooke, *op. cit.*, II, 136, on food prices (1826-1827), relatively high "in the distressed state of the manufacturing population."

Until the last quarter of 1832 the wheat price remained well above 50s. and, although the farmers never ceased to complain, their position was not desperate. The three following years (1833-1836), however, brought abundant harvests, low prices, and extensive parliamentary investigations. Although the pressure for further protection increased, no action was taken by a Parliament in which anti-agrarian interests had been materially strengthened by the Reform Bill of 1832.[15]

At the close of 1836 the wheat price again rose suddenly as the harvest of that year appeared inadequate.[16] Chronically bad yields kept the price abnormally high until 1842. In this period the anti-Corn Law forces crystallized outside of Parliament, deriving additional strength from the generally depressed state of industry and the high level of unemployment, especially after 1839. This protracted pressure on real wages helped bring about the Whig tariff reforms of 1841: but "Corn duties they left where they were, crying over their shoulders as they were being pushed out of office that a reasonable fixed duty . . . was the right thing."[17] Peel was elected on the issue of the sliding scale, and in 1842 his modifications of the Corn Law of 1828 consisted in lowering the maximum duty and in making the sliding scale less steep.[18] He himself believed this arrangement to be a considerable reduction in protection, and it was put forward as such. There is no doubt that the high food prices and depression in the previous few years had, by 1842, helped to discredit the whole argument for agricultural protection and for tariffs generally.

The role of the Irish famine in the suspension and, ultimately, in the repeal of the Corn Laws is a familiar short-period influence, as is also the tangled and dramatic political story of 1846. It is probable in fact, that strictly economic considerations played a somewhat lesser part in the final repeal than in some of the earlier modifications. In 1845 and the first three quarters of 1846 the domestic wheat price ranged between 45s. and 59s. A few years before it had been over 70s. The Irish famine might

[15] The Poor Law of 1834, however, may be considered, in part, as a concession to the hard-pressed land owners. It was in the agricultural districts that the burden of poor rates, under the old system, was most severely felt.

[16] Tooke, *op. cit.*, II, 157-158.

[17] J. H. Clapham, *An Economic History of Modern Britain* (1926), I, 497. The Whigs went out of office in 1841, to be succeeded by Peel and the Tories, until 1846.

[18] W. Page, *Commerce and Industry*, I, 128-130. The new scale started with wheat at 50s. paying 20s. duty, diminished to 1s., when the price was 73s. (as in the scale of 1828). There were two "rests" in the scale, wheat from 52s. to 54s. paying a duty of 18s. a quarter and wheat between 66s. and 68s. paying duty of 8s. This, it was hoped, would check the speculations of corn dealers, who had been tempted, by the steepness of the scale of 1828, to hold back corn in the hope of getting higher prices.

have been dealt with by extraordinary measures short of actual repeal. The rise in the wheat price (to a peak of 93s. in June) in 1847, however, would almost certainly have ended agricultural protection then, if its end had not been accomplished earlier.

This account is not meant, of course, to deny the long-period factors making for a reduction in agricultural protection: the growth of population, the accelerated industrialization of Britain, the widening political power of the urban middle classes and their free-trade doctrines. But it is clear that the timing of the events leading up to repeal were closely connected with the British harvests and other short-run factors influencing the absolute and relative level of the prices of agricultural products.

III

A. *The Speenhamland System, 1795.* The years 1794 and 1795 saw some industrial recovery in Great Britain, from the depression of 1793. A more powerful force, however, affecting labor's position, was a rise in foodstuff prices, due primarily to bad harvests.[19] The wheat price was 43.2s. per quarter in January 1792, 108s. in August 1795. Cost-of-living indexes reveal this rise graphically.

	Gilboy-Boody (cost of living in London)	*Silberling* (wholesale prices of foodstuffs, etc.)
1793	148	106
1794	168	110
1795	179	130

Although money wages rose, there seems little doubt that they rose "in a very inadequate proportion to the increased price of the necessaries of life."[20] There was widespread evidence of physical distress,[21] and the wage-subsidy scheme for out-of-door relief was instituted, much in the tradition of the Elizabethan poor laws.

B. *The Combination Acts, 1799 and 1800.* From the last quarter of 1796 until about the middle of 1799 the price of wheat and the cost of living remained moderately low. Despite the brief but severe depression of 1797, these were, internally, years of relative peace. The wheat price

[19] Tooke, *op. cit.*, I, 181-183, and 187.

[20] Tooke, *op. cit.*, I, 185-186.

[21] Tooke, *op. cit.*, I, 225-226. It is perhaps worth noting that the situation in 1795-1796 had direct and immediate influence on the ideas of Thomas Malthus, Frederick Eden, and Thomas Paine, as well as many others.

(which, at the end of 1798, was down to 48s.) then rose to a peak of 154s. in March 1801. The cost-of-living indexes move as follows:

	Gilboy-Boody	*Silberling*
1798	165	121
1799	229	143
1800	252	170
1801	190	174

The government acted by offering bounties on grain imports, by sending agents to the Baltic ports, and by encouraging the process of enclosure. In 1799-1801, in general, the working classes were fairly well employed. Even the crisis in the Hamburg trade, in 1799, did not induce a prolonged deflation.[22] Under these circumstances the workers had considerable market leverage in contracting money-wage bargains.[23] In the attempt to maintain their real wage, at a time of rapidly rising costs of living, the men resorted to various types of combinations. Even agricultural workers banded together in certain areas, notably in Norfolk.

Although the combination movement was very much the outgrowth of a particular short-period situation, and although the typical expression of discontent was the local bread riot or strike, the unrest was, at times, successfully linked with republican ideas. The Corresponding Societies, particularly, attempted to shape and unify the general dissatisfaction around the current liberal platform. With the memory of the French Revolution fresh in mind the Government acted to repress the Corresponding Societies and the Combinations. The Acts of 1799 and 1800, reënforcing existing legislation,[24] made illegal all collective working-class activity except the guild functions of the Friendly Societies.

C. *The Repeal of the Combination Acts, 1824 and 1825.* From 1820 through the early months of 1825 a fairly continuous increase in output and employment occurred. In the latter stages of the boom prices rose, relieving manufacturers briefly from the chronic downward pressure

[22] Willard Thorp's *Business Annals* (1926), 152, seriously misrepresents the position of British industry from 1798 to 1801. Each of those years is headed "depression," although output was almost certainly increasing and unemployment was low. This is not meant, of course, to deny the reality of the difficulties due to high living costs, from 1799 to 1801.

[23] For the role of a prosperity demand for labor in the unrest of these years see Macpherson, *op. cit.*, IV, 475 and 500. Strikes for higher wages were, in this as in later periods, a familiar characteristic of the latter stages of business expansion.

[24] For the position of the Combination Acts of 1799-1800, as part of a long tradition of limitation, *see* D. George, "The Combination Acts Reconsidered," *Economic History*, 1926.

that had existed since 1814. But the period 1820-1824 saw a coincidence of increased output and a sagging price level. Foodstuff prices, too, were fairly low. It is not surprising, then, that in the four years after Peterloo British labor was relatively peaceful.

The fact of increasing prosperity, too, made it possible for the industrialists and the Government to afford a greater tolerance:[25] "Exceptional measures of repression were allowed gradually to lapse; the activities of spies were relaxed; and the law was set less freely in motion against working-class attempts at combination." It was in this atmosphere, early in 1824, that Place and Hume maneuvered the repeal of the Combination Acts.

The repeal immediately brought into the open the trade unions which had been operating under cover in the previous two decades; and it encouraged the formation of many others. A wave of strikes broke out and, in the following year, an aroused Parliament seriously limited the easy-going terms of the Act of 1824.

There can be little doubt that the strikes of 1824-1825 can, in some measure, be attributed to the repeal of the Combination Acts. Two other factors, however, were then operating. In the first place, in the latter half of 1824, the boom was suddenly accelerated, pushing the major British industries close to full employment. Enormous exports to South America and to the United States, as well as widespread internal enterprise, created a typical, late prosperity situation. Strikes for higher wages would, normally, be expected.

This tendency was accentuated by a second factor, a sudden rise in living costs:[26]

	Tucker (London artisans)	*Silberling*
1823	124	111
1824	126	113
1825	137	128

In 1825, with a confidence born of some five years of increasing employment, the unions instituted numerous strikes for higher wages—in the cotton, wool, coal, iron, building, and other trades.[27] At about the

[25] Cole, *op. cit.*, I, 88.

[26] For an account of the inadequate harvest which largely explains this rise, *see* Tooke, *op. cit.*, II, 132-135.

[27] For a detailed account, from contemporary sources of strikes in 1824-1825, *see* Smart, *op. cit.*, II, 232-233, and 306-313.

middle of 1825, however, the business cycle turned downward; and, although the strikes continued for some time, by the end of the year "combination . . . was knocked on the head. Bradford weavers and combers went back to work at the old wages . . . so did the Renfrewshire colliers."[28] In the bitter industrial conflicts that continued into 1826, labor was no longer on the offensive, but attempting to preserve wage rates in the face of a declining industrial demand.[29]

The repeal of the Combination Acts is properly regarded as an expression of the general trend toward laissez faire, paralleled, in the twenties, by the Huskisson tariff reforms. Hume, in Parliament, presented the measure in such a light. Both Hume and Place regarded the unions as illiberal institutions brought into being by the repressive action of the Government; and they looked forward to their disappearance with the repeal of the Combination Acts.[30] Nevertheless, the tolerant action of Parliament in 1824 was directly connected with the previous years of prosperity; the violence of the strikes of 1824-1825 was largely the outgrowth of the situation in the labor market on either side of the cyclical turning point, accentuated by rising costs of living. It is possible, too, that the intemperance of the reaction of the Government in withdrawing, in 1825, a large part of the freedom granted in the previous year, may be linked to the change in the industrial outlook which occurred in that year. With commodity prices falling, and disillusion setting in with respect to the newly floated Latin American mining issues, the doctrine of laissez faire, as applied to labor organization, seemed somewhat more empty than in 1824.

D. *The Factory Act of 1847.* Factory acts in the first half of the nineteenth century were passed in 1802, 1819, 1833, 1842, and 1847. Each arose in a unique political setting; but each saw a similar combination of humanitarian and anti-industrial groups arrayed against the manufacturers. Within the ranks of the manufacturers there were, of course, notable exceptions: men like Peel and Whitbread and Owen, to whom the conditions of factory labor were ethically outrageous and who believed that shorter hours and better conditions meant great efficiency and profits. In parliamentary debate, humanitarian arguments led to

[28] Smart, *op. cit.*, II, 312-313.

[29] *See Annual Register*, 1826, Chronicle, 67, 109-112, 115, 149-151.

[30] J. L. and B. Hammond, *The Town Laborer*, 134-136; Page, *op. cit.*, I, 77, quotes Place as follows: "combinations will soon cease to exist. Men have been kept together for long periods only by the oppression of the laws; these being repealed, combinations will lose the matter which cements them into masses and they will fall to pieces."

rebuttal based on pleas for the freedom of the individual, or originating in attacks on state paternalism. To these the manufacturer would often add the claim that shorter hours meant a serious reduction or even the destruction of the existing margin of profit, and the loss of foreign markets.

There is, however, probably some significance in the fact that these acts were all passed at, or close to, a low point in cyclical fluctuations. The years 1819 and 1842 are such troughs in general business conditions, while 1833 and 1847 were also generally depressed years (the troughs were in 1832 and 1848).[31] To a limited extent the children and women working in the factories and mines were competing with the men available for the jobs. At a time of severe cyclical unemployment it would be natural, then, that the men should complain, and attempt to oust their competitors or to limit their working time. A major driving force behind the movement which led to the Act of 1833, for example, was, "the hope of absorbing men who are 'hanging on the trade idle.' "[32]

In the case of the ten-hour bill of 1847 the role of depression is even clearer. From 1845 onward unemployment was steadily increasing. In 1844 a ten-hour bill was defeated; in 1847 it was quietly passed:

> *The Times,* in a leading article on the following day, said it was not to be imagined that there had been any considerable degree of conversion on the subject. The argument stood very much where it had done in 1844, and had, in fact, been almost exhausted in that memorable struggle. The absence of fierce opposition was attributed in a large measure to the fact that the chief argument of the opponents—namely, that the country could not spare the last two hours of industry—could not be brought forward in 1847 without inviting its own refutation, for so great was the depression of trade that the mill owners found it impossible to keep their mills working for so long as ten hours.[33]

From the side of the workers, too, a distinctly nonhumanitarian factor can be detected in the ten-hour agitation. There seems to be little question that the labor unions viewed the measure as a means of restricting the labor supply and maintaining wage rates at a time of serious depression.

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[31] The Factory Act of 1802, which dealt only with the pauper children, was probably inspired almost exclusively by religious and humanitarian motives.

[32] Quoted by Clapham, *op. cit.,* I, 573-574, from First Report of the Factory Commissioners (1833), XX, 849. *See also* Frederick Engels, *The Condition of the Working Class in England in 1844* (1892), 134-148, on the competition between the men and their wives and children.

[33] *See* B. L. Hutchins and A. Harrison, *A History of Factory Legislation* (1903), 70, with reference to the *Times,* May 4, 1847.

At an early stage of the ten-hour agitation (December 1841) in a period of severe unemployment, Fielden was reported as having said:[34]

It is "the duty of individuals to curtail the quantity of production when there is an over-abundant supply of the article they produce rather than increase it and reduce wages." He considered that "a reduction of hours of labour from twelve to ten would have this tendency," and was therefore desirable, as they had already "got mills and machinery to produce more than they could find a vent for at a remunerating price."

To some extent, then, the ten-hour bill was passed because unemployment existed and because it was believed by some to be a recovery measure. In markets other than that for labor the restriction of supply, in an effort to maintain prices, was a typical depression phenomenon in these years.

The long-run economic and social influences reflected in the debates are perhaps more familiar:[35]

In Parliament, the factory question, from this time down to 1847, was really a part of the wider struggle between the agricultural landlords and the manufacturers over the repeal of the Corn Laws. "The Tories were taunted with the condition of the labourers in the fields, and they retorted by tales of the condition of the operatives in factories. The manufacturers rejoined by asking, if they were so anxious to benefit the workman, why did they not, by repealing the Corn Laws, cheapen his bread. The landlords and the mill owners each reproached the other with exercising the virtues of humanity at other people's expense."

This is not to deny, of course, that sincere humanitarians worked within the ten-hour movement; nor does it underrate the importance of the strange political battle which led, finally, to the passage of the 1847 bill. But it is clearly a case where the short-run position of the economic system—the degree of unemployment—played a part in determining the moment of its ultimate acceptance.

IV

Testifying before the Committee on Manufacturers (1832) William Mathews, Staffordshire iron manufacturer, was asked:

9991. Do you conceive that the depression of trade in late years has had any effect in producing . . . discontent?—Very great. 9992. Do you think

[34] Hutchins and Harrison, *op. cit.*, 63-64*n*.
[35] Hutchins and Harrison, *op. cit.*, 61-62, quoting Morley's *Life of Cobden*, II, 300.

the working classes of Staffordshire ever show political discontent so long as they are doing well in their particular trade?—Not at all; you cannot get them to talk of politics so long as they are well employed. 9993. Do you think any man could create discontent among them so long as they were doing well?—It is utterly impossible.

The converse of the dictum—"you cannot get them to talk of politics when they are well employed"—is not to be generalized without reservation; but within this period it serves to explain the political unrest of such years as 1811-1812, 1816, 1819, 1826, 1830-1832, 1837, 1839-1842, and 1847-1848. In each of these cases a fairly direct connection can be traced between unemployment and mass dissatisfaction. In the case of the reform bill, for example, to which Mathews's questioners were referring, there can be little doubt that the intense depression of the latter months of 1831 and the early months of 1832 contributed significantly to the pressures that led to its passage.

The activities of the Chartists, covering more than a decade, offer an interesting, if somewhat crude confirmation of this thesis. General business conditions reached a peak in 1836; 1837 was a year of severe depression; some recovery followed through 1838, to a second peak early in 1839. From the latter months of 1839 to the end of 1842 Britain suffered almost unbroken depression, exacerbated in its effects on the working classes by bad harvests. A recovery set in during 1843 which culminated in a peak in 1845. Business activity then declined to a low point in 1848. The phases of the most important Chartist activity occurred within severe depression; its temporary, but almost complete disappearance in 1843-1845 coincides with the prosperity of those years.[36]

The three focal points of Chartist activity came in 1839, 1842, and 1848. Beginning in 1837 the movement gradually grew to the point where a petition boasting some million and a quarter signatures was presented to Parliament in 1839.[37] The failure of this petition, and the Government's prosecution of the leaders, caused a temporary stagnation; but in 1842 a petition containing almost three and a third million names was placed in the hands of the Government.[38] In that year, too, the Chartists helped lead a series of bitter strikes, marked by extensive sabotage.

The wheat price fell, with the advent of a promising harvest, in the summer of 1842, and in the following year recovery was under way.

[36] This relationship has been traced in detail by Preston W. Slosson, *The Decline of the Chartist Movement* (1916), 115-137.

[37] *Ibid.*, 60.

[38] *Ibid.*, 61.

For the Chartists "a long period of discouragement and inactivity followed," until the return of depression in 1846.[39] Still another petition went to Parliament in that year, and throughout 1847 the strength of the movement increased. Early in 1848 there were large meetings in the principal cities, climaxed by the presentation of the signatures of what purported to be almost six million British men and women.[40] Threats of direct action, however, failed to materialize, and, in the following years, prosperity and inadequate leadership brought the movement to an end.

The demand for universal suffrage at this period in British history patently had roots deeper than cyclical unemployment. The chronically depressed position of the hand-loom weavers, many of whom were Chartists, was also more than a cyclical problem. Yet, apparently, depression was required before the political doctrines of the Chartist leaders could command wide or effective support.

These examples by no means exhaust the possibility of tracing important links between short-run economic fluctuations and political and social events in the years 1790-1850. There are innumerable other cases available and those traced here deserve more detailed analysis. Even these brief summaries, however, reveal the manner in which cyclical fluctuations and cost-of-living movements served to detonate and to give expression to the familiar underlying trends. They should also emphasize the distinctive economic, social, and political atmosphere of each year, or even different parts of the same year. The use of long-run conceptions like "the growth of the free-trade movement," or the "development of working-class organizations," or "the industrial revolution" tends to blur this type of distinction. A necessary, but by no means sufficient requirement for a thorough interrelation of economic and other factors is a knowledge of fluctuations in general business activity and in costs of living.

Columbia University W. W. Rostow

A Note on the Statistics

The indexes of imported and domestic prices used here have recently been constructed in the course of a study of "The Growth and Fluctuations of the

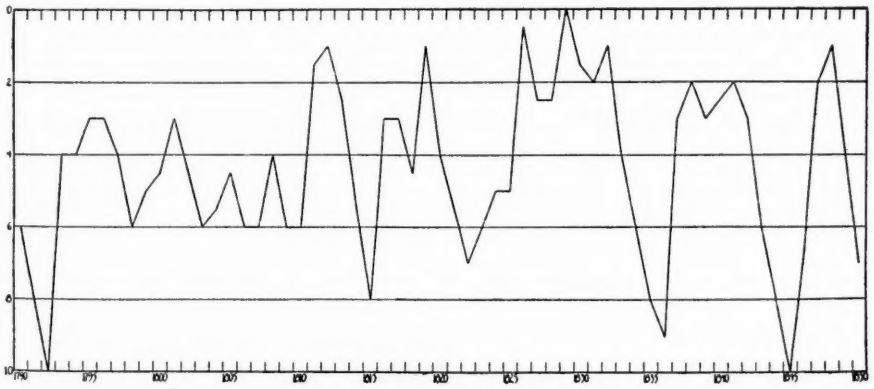
[39] *Ibid.*, 78 and 94.

[40] On close examination it was later estimated that about two million bona fide signatures were attached to this final petition.

British Economy, 1790-1850," under the direction of Dr. Arthur D. Gayer. The Gilboy-Boody index appears in "The Cost of Living and Real Wages in Eighteenth Century England," *Review of Economic Statistics,* August 1936. The Silberling index is from "British Prices and Business Cycles, 1779-1850," *Review of Economic Statistics,* 1923. The Tucker index is from "Real Wages of Artisans in London, 1729-1935," *Journal of the American Statistical Society,* March 1936.

The business-cycle index is an outgrowth of an extensive history of business fluctuations (also a part of Dr. Gayer's study). Each year is rated from 0 (deep depression) to 5 (major peak). The ratings represent judgments made on the basis of all available statistical evidence, as well as a large body of qualitative material. In addition, an index of business activity was constructed containing some half dozen of the more significant series. To present that index as a cyclical indicator would have required the abstraction of secular trends from each of the series; the index misrepresented business fluctuations at several points, in the light of wider information. It was thus decided to use the semidescriptive chart presented here. It is similar in many respects to those compiled from Thorp's *Annals* by Gottfried Haberler (*Prosperity and Depression*). The wheat price is an annual average, derived from weekly quotations (1790-1834) in the *London Gazette* and (after 1834) monthly quotations in the *Gentleman's Magazine.*

SOCIAL TENSION CHART



The so-called Social Tension Chart is of even more imaginative construction than the business-cycle index. The wheat price was first reduced to a 0 to 5 scale: 0 representing a year of abnormally high wheat price (and thus, like a 0 year in business activity, "high social tension"), 5 representing a year of abnormally low wheat price. This abstraction of the wheat price was then added to the business-cycle pattern, and the total plotted inversely to a high wheat price and/or estimated severe unemployment thus tending to raise the level of the chart. This method makes the quite arbitrary judgment

"SOCIAL TENSION" AND ITS COMPONENTS

	Business-Cycle Pattern	*Wheat Price* (actual annual average: s. per quarter)	*Wheat Price* (abstracted; inverse)	*"Social Tension"**
1790	3	50.5	3	6
1791	4	45.0	4	8
1792	5	41.2	5	10
1793	0	47.7	4	4
1794	1	51.8	3	4
1795	2½	74.1	½	3
1796	3	77.1	0	3
1797	0	52.8	4	4
1798	1	50.2	5	6
1799	3	67.6	2	5
1800	4	113.7	½	4½
1801	3	119.0	0	3
1802	5	67.2	4	9
1803	1	56.6	5	6
1804	1½	59.8	4	5½
1805	2½	87.5	2	4½
1806	3	79.0	3	6
1807	2	73.3	4	6
1808	1	78.9	3	4
1809	4	95.4	2	6
1810	5	106.1	1	6
1811	0	94.6	1½	1½
1812	1	125.2	0	1
1813	1½	108.5	1	2½
1814	2½	73.9	3	5½
1815	3	64.2	5	8
1816	0	75.6	3	3
1817	3	94.8	0	3
1818	5	84.2	½	5½
1819	0	73.0	1	1
1820	1	65.6	3	4
1821	1½	54.3	4	5½
1822	2	43.2	5	7
1823	3	51.9	3	6
1824	4	62.1	1	5
1825	5	66.7	0	5
1826	0	56.9	½	½
1827	1½	55.9	1	2½
1828	2	60.4	½	2½
1829	0	66.0	0	0
1830	1½	64.4	0	1½

"SOCIAL TENSION" AND ITS COMPONENTS—*concluded*

	Business-Cycle Pattern	*Wheat Price* (actual annual average: s. per quarter)	*Wheat Price* (abstracted; inverse)	*"Social Tension"**
1831	2	66.3	0	2
1832	0	58.7	1	1
1833	1	53.0	3	4
1834	2	46.3	4	6
1835	3	39.4	5	8
1836	5	48.4	4	9
1837	0	55.6	3	3
1838	1	64.3	1	2
1839	3	70.6	0	3
1840	2	66.2	½	2½
1841	1	64.3	1	2
1842	0	57.2	3	3
1843	1	50.2	5	6
1844	3	51.1	5	8
1845	5	50.9	5	10
1846	4	54.6	3	7
1847	2	69.3	0	2
1848	0	50.5	1	1
1849	1	44.2	3	4
1850	2	41.8	5	7

* "Low social tension" is indicated by high figures in this index; this series is designed to be plotted inversely.

that cyclical unemployment and high food prices were equally responsible for unrest. Low wheat prices, of course, affected farmers unfavorably and probably to a lesser extent, agricultural workers. At best, then, the Social Tension Chart summarizes influences operating on the industrial working classes.

It is perhaps unnecessary to emphasize the essentially approximate and descriptive nature of these calculations. They represent, however, a useful summary of a considerable body of evidence, and the results conform fairly well to qualitative political and social data. Intervals of "high social tension" bred known symptoms of unrest, which, in many cases, expressed themselves in important legislation or in the activities of the Luddites, the Chartists, and other groups: intervals of "low social tension" saw these movements fade from sight, although the low wheat prices that helped create them often brought the agricultural interests clamoring to Parliament.

Book Reviews

English Villagers of the Thirteenth Century. By George C. Homans. Cambridge: Harvard University Press, 1941. Pp. xiv, 478. $4.50.

The publication of this interesting and attractive book is a credit not only to the author but also to the Society of Fellows of Harvard University. Thanks to his appointment as junior fellow, Mr. Homans has had the leisure for extensive research in published and unpublished materials, as well as for careful, thoughtful writing. I have thoroughly enjoyed reading *English Villagers of the Thirteenth Century.* Mr. Homans expresses himself clearly and gracefully. His descriptions have a charm that is unusual in scholarly books on the agrarian society of the Middle Ages. His account, of course, is not wholly new. He admits that for some of his chapters he has largely drawn on the work of such famous predecessors as Maitland and Vinogradoff. But others of his chapters, being based on original study of the sources, make good contributions to our historical understanding. In general, Mr. Homans's workmanship is all that it should be. To find a volume so free from slovenliness of statement and inaccuracy of citation is indeed a pleasure. I note only that our old friend the *Rectitudines* appear as the *Consuetudines Singularum Personarum* (p. 223).

Mr. Homans combines his chapters in four books: Fields, Families, Manors, and Feasts. In the first he sketches the open-field system—or, as he prefers to call it, champion husbandry. In the second, a more original exposition (*Economic History Review,* 1937–1938, 48–56), he discusses the significance of family arrangements for village custom, especially in connection with the inheritance of land, marriage, wardship, and alienation. In the third he considers varieties of manorial organization, the inhabitants of the manor, and their relations with the lord. In his last book he takes up the villagers' yearly routine, with particular emphasis upon the church and its festivals—to end with a few remarks about the "anatomy of society." Since for most of these chapters Mr. Homans uses records and literary works not only of the thirteenth century but also of those following, he might as well, or perhaps better, have called his study *English Villagers of the Later Middle Ages.* The book's title, however, is of less importance than its scholarly significance.

As a historian, I see in Mr. Homans's description of village life the principal value of his work. If space permitted, I could dilate at length on interesting facts here brought out in connection with agricultural practice, manorial tenure, household management, rustic holidays, and other phases of village custom. But to Mr. Homans the descriptive material that he presents is chiefly interesting as sociological data. That an instructor in sociology should have such an interest is natural enough; and that a sociologist, by applying his special knowledge, should hope to elucidate the social

history of medieval Europe seems eminently proper. What disturbs me in this particular case is the character of the sociological inquiry and its results. It may be true, as Mr. Homans declares (pp. 35 f., 218), that economic historians have exaggerated the importance of food and geography in determining medieval custom, and that constitutional historians have neglected the influence of family organization upon medieval institutions. Yet an argument—whether styled historical, scientific, or something else—ought to be supported by valid evidence; and, in my opinion, some of the arguments in this book are not thus supported.

When Mr. Homans turns from describing English villagers of the thirteenth century to comment upon the thoughts and habits of men in other ages, he tends to lapse into hasty and repetitious generalization. Not infrequently, it seems to me, he involves himself in contradiction. For example, he denies (p. 224) that there was such a thing as a typical manor, after explaining (p. 6) his attempt "to describe the social order of English villages in the thirteenth century" as resting on the belief "that many English villages conformed more or less closely to a certain general type." Although (p. 223) he disclaims interest in the origin of the manor, he constantly (pp. 25, 29, 86, 101, 214, 264–265, 323, 328, etc.) takes for granted the primeval existence of the self-governing village community. His third chapter, he says (p. 29, n. 1), follows Pirenne's interpretation of medieval history. Yet, with evident approval (p. 31), he cites Sombart on the origin of towns in medieval Europe and later (pp. 337 f.) virtually repeats the *Landgemeinde* theory of Von Below and Von Maurer. Nor would Pirenne have approved his acceptance (pp. 4–5) of the thirteenth century as an age in which social conditions were essentially static.

Mr. Homans's casual remarks (pp. 32, 216) about the Conqueror's "shrewd distribution of confiscated estates" and about "English place-names in *-ing*" must lead us to wonder how familiar he is with the works of J. H. Round and other constitutional historians. Statements to the effect that (pp. 337–338) "most villages had their fairs," that the regulation of trade in boroughs reflected the traditional arrangements of champion husbandry, and that villages "were not boroughs only because they were not recognized as such," must lead a good many economic historians to raise their eyebrows. Precisely what does Mr. Homans regard as the fundamental distinction between the peasantry and the bourgeoisie of the thirteenth century? And can any one who understands the feudal system call it (p. 341) "the particular verbal scheme according to which the men of the Middle Ages described the distribution of wealth and certain other relations between man and man"?

It is a bit surprising, furthermore, to find Mr. Homans so ardent a disciple of John Richard Green and William Francis Allen. Throughout his

book he tends to minimize the importance of the manorial lord (particularly pp. 255, 258, 323, 339 f.) because he believes that the village community of the "northern peoples," containing the germ of self-government, lived on to become the progenitor of the New England town. This good old doctrine of the Germanist school I confess to have treated with scant respect—see especially *The Constitution Reconsidered* (Columbia University Press, 1938), p. 38. And until Mr. Homans can adduce a little evidence to support his argument, I shall continue to prefer the thesis of Mr. A. B. White (*Self-Government at the King's Command,* p. 2), "that Norman and Angevin royal training has been more potent than an urge to self-government in Anglo-Saxon blood."

More specificially, if Mr. Homans wishes to convince those of us who are skeptical of his pet theory, here are a few questions for him to answer. What proof have we that a self-governing township existed among the Anglo-Saxons, or a self-governing *Landgemeinde* among the early Germans? How could the agricultural routine implied by the open-field system persist for centuries except under seignorial management? Who could the reeve have been in a vill of Norman England if not a manorial official? Why should a truly self-governing community amerce itself 20s. for failure to install a harvester by a certain date (*see* Stephenson and Marcham, *Sources of English Constitutional History,* pp. 246 f.)? Did medieval "election" necessarily imply popular choice, as when a number of men were "elected" for Edward I's army (*English Villagers,* pp. 329–330)? Was not the New England town an adaptation of the Tudor civil parish, and how did that originate?

This book of Mr. Homans has many excellencies. But unless I am mistaken, a new sociological approach to the agrarian history of medieval Europe is not among them.

Cornell University CARL STEPHENSON

The Cod Fisheries, The History of an International Economy. By Harold A. Innis. New Haven: Yale University Press; and Toronto: The Ryerson Press, 1940. Pp. xiii, 520. $3.50.

The Diplomatic History of the Canadian Boundary, 1749–1763. By Max Savelle. New Haven: Yale University Press; and Toronto: The Ryerson Press, 1940. Pp. xvi, 172. $2.50.

The United States, Great Britain, and British North America from the Revolution to the Establishment of Peace after the War of 1812. By A. L. Burt. New Haven: Yale University Press; and Toronto: The Ryerson Press, 1940. Pp. xv, 448. $3.25.

Reciprocity, 1911, A Study in Canadian-American Relations. By L. Ethan Ellis. New Haven: Yale University Press; and Toronto: The Ryerson Press, 1939. Pp. xi, 207. $2.50.

These monographs are parts of the survey of Canadian-American relations that the Carnegie Endowment for International Peace is issuing. It is the good fortune of the editors that they have been able to draw on so many seasoned scholars in both countries, and to publish in the series works that have long been in preparation.

Innis, *The Cod Fisheries.* The title is too modest; moreover, it is not enough to say that here is the definitive account of the North Atlantic fisheries from 1497 to 1936. The originality of approach and the versatility of treatment make this work a distinctive contribution to the technique, and to the task, of writing economic history on a large pattern. Once again Mr. Innis has demonstrated the significance of the staple industries in the history of the modern world. Those who are familiar with his earlier books on the fur trade and the mining frontier, and with his scattered papers, are aware of the pioneer work which he and his associates are doing in reinterpreting the history of northern America as a unit, in terms of the problems of staple production. To the study of Canadian history, long preëmpted by the annalist, the romanticist, and the professional patriot, Innis's "Toronto School" has brought an earthy realism in their fidelity to the simple facts of geography and technology. This particular study, however, treats of a sphere larger than Canada. The peculiar genius of the author is his ability to trace the interplay of technological advance, international relations, economic revolution, and internal political adjustment in each of the dozen countries or colonies that figured as producers or consumers of fish. These changing developments he sees against a background of constant factors: climate, oceanography, and physiography.

Mr. Innis demonstrates clearly the role that the fisheries played in English commercial expansion. It is no accident that England's oldest colony is Newfoundland, "the first European frontier." For want of salt, the British took to drying their catch on the shores adjacent to the North Atlantic banks, and around these drying grounds grew up the permanent settlements that decentralized the fisheries, made monopoly impossible, and ultimately destroyed West Country enterprise. It was the weight of these colonies, in man power and in the indirect aid given the Navy, that England used as leverage to oust the French from their precarious foothold in America.

Using the fisheries as a base, England constructed a series of commercial triangles that contributed to her expansion and prosperity. The superior efficiency of the dry-cure fisheries enabled her to invade the markets of the Catholic Iberian countries and thus to get access to the stores of bullion looted from America. With this specie, England was able to establish a

preferred position in the East India trade. In the eighteenth century, England built up other profitable triangles on the export of low-grade fish to the slave-holding plantations of the tobacco and sugar-rum regions.

In the long run, however, the fisheries proved to be a divisive factor in the Empire. New England organized around the centers of cod production a commercial system of its own, which conflicted with the interests of the British carrying trade, the British planters, and the British manufacturers. But even after political freedom had confirmed economic independence, the fisheries continued to serve as a basis for commercial activity that operated as a decisive force in Anglo-American relations, and in the political structure of both the United States and the British Empire.

The "commercialism" fostered by the fisheries was built not only on strategic location and on the sustained demand for dried fish, but on a simple technology. The introduction of a more elaborate system of production, based on the steam trawler, the radio, and refrigeration, has presented problems to which Brittany, Nova Scotia, and Newfoundland have not yet adjusted themselves. These regions have been unable to mobilize new capital, and hence control of the industry has passed to other hands. The emphasis on fresh fish has forced the trawler to operate from a base nearer the markets; processing has been transferred thither; employment in the older regions has been drastically reduced; and Newfoundland, because of its isolation, has been compelled to specialize in the dried product, for which the market is unstable. The onset of this "capitalism" has destroyed "commercialism," impoverished Nova Scotia, and contributed to the bankruptcy of Newfoundland.

It is impossible in a brief review to do more than suggest the breadth of the author's range and the persuasiveness of his logic. Conceived on a magnificent scale, this book carries on every page the evidence of exact scholarship, ripe judgment, and brilliant insight.

Savelle, *The Diplomatic History of the Canadian Boundary, 1749–1763.* Here is a compact summary of the long and many-sided negotiations that attended the retirement of France from continental North America. The strategy of this retreat is placed in its proper perspective as part of the whole story of European diplomacy. The principal virtue of this work, made manifest on the lower half of every page, is the careful dependence on manuscript sources. It is unfortunate that a book which treats diplomacy so definitively should only suggest the importance of economic interest, especially when systematic effort to relate politics to the commercial conflict would have given the study greater reality.

Burt, *The United States, Great Britain, and British North America* (1775–1818). Mr. Burt's study is a brilliant synthesis of the most recent scholarship, of which his own work is not the least. Blending great common

sense with fidelity to the documents, he has produced a perspicacious analysis of the issues that embittered Anglo-American relations: Loyalist equities, the western posts, the fur trade, the fisheries, maritime rights, and boundary controversies. In his careful summation of the "causes" of the War of 1812, Mr. Burt challenges the thesis that western problems were more important than the neutral-rights controversy. Still it does not seem to me that he has undermined the persuasive logic of J. W. Pratt's *Expansionists of 1812.*

After reading Mr. Ellis's *Reciprocity, 1911,* one concludes that it is still too early to look for a final account of Canada's rejection of the Taft-Fielding trade agreement. In 1911 a ministry which had sponsored reciprocity went to the people for a new mandate before introducing legislation to implement the informal understanding. For the first time since the Civil War, the United States was ready for coöperation, and Congress had already ratified the proposal. Canada had vainly sought some measure of reciprocity at intervals since 1866; yet when the offer came in 1911, it met a smashing rejection at the polls. The author's principal thesis is that the outcome of the election can be explained as the work of the protected manufacturers, whose astute propaganda terrorized labor, deluded the farmers, and worked up a factitious threat to the imperial connection.

This theory is not susceptible of final proof, but Mr. Ellis has supported his argument with a careful analysis of the propaganda, and has tried to catch its reflection in the public press. The result is illuminating but inconclusive. It is unfortunate that Canadian manuscript sources are left untapped; the good use to which the author has put the Taft and Knox papers in Washington suggests how profitable would have been an examination of the Laurier, Borden, and Sifton collections. Not all of this material is accessible, but the available material has not been used.

Yet it is not so much the want of complete documenting that mars this book. The theory of malign deception is too simple: It overlooks a basic transformation in Canadian economy. The reciprocity that Canada had sought so eagerly in the last half of the nineteenth century was no longer so vital to her prosperity. The explosive development of the prairies after 1895, with its attendant economic and political adjustment, effected a measure of integration for the first time in Canadian history. The peopling of the prairies stimulated the growth of eastern industry; the large-scale export of wheat created new credits in London; and at home the unnatural East-West lines of communication hardened as enormous investments were locked into the rigid capital structure of the transcontinental railways. Economic nationalism was linked to imperial preference as England relinquished a policy of strict free trade. Reciprocity was not only less imperative, it actually constituted a real threat to the new structure of the Canadian economy.

Hamilton College THOMAS H. LE DUC

Men of Wealth. By John T. Flynn. New York: Simon and Schuster, 1941. Pp. xi, 531. $3.75.

If John T. Flynn had written a weighty economic history of the world under the capitalist system and given to it a fittingly scholarly title, probably not a dozen people outside of the universities would have read it. So he satisfied his ambition to write a historical analysis of capitalism, and at the same time assured himself of a wider audience for his efforts, by writing biographical sketches of the eleven wealthy men and the one wealthy woman whose fortunes he felt were of greatest historical importance. These biographies illustrate the economic developments of the western world from the days of the Renaissance to those of the Second World War.

Few of the author's chapters manifest much admiration for their subjects; most of them are highly caustic. Strangely enough John D. Rockefeller, whom Mr. Flynn castigated in *God's Gold* less than ten years ago, is treated rather gently. During the interim Rockefeller has become "The Builder." On the other hand, J. Pierpont Morgan, "The Promoter," receives short shrift. And from an author of Mr. Flynn's political and economic beliefs, it is not surprising that emphasis is given to the similarities between the financing of John Law's Mississippi Bubble and the monetary legerdemain of Franklin D. Roosevelt's New Deal.

Mr. Flynn categorically announces his philosophy of wealth in the foreword: No man working with his own hands and without help from others can produce enough to make himself tremendously rich. Only by getting for himself some part of the produce created by others can he amass vast wealth. This process may take various forms, and he illustrates the dozen most typical forms used since the Renaissance. He makes no pretense that his dozen subjects are the only ones that could have been chosen. They were selected because they represented the methods of acquisition typical of the eras in which they lived, and because they are distributed chronologically throughout the last five centuries, with considerable emphasis on the last.

The outline of wealth accumulation is contained in the table of contents: Jacob Fugger was an organizer of capitalism; he pioneered in perfecting strategems which later became elementary. John Law was a magician, the forerunner of Wall Street market riggers and of some New Deal economists. The Rothschilds, sons of squalor and devoid of nationalist feelings in an age of rampant nationalism, were international bankers. Robert Owen was an industrialist turned reformer, one of Tom Johnson's predecessors. Cornelius Vanderbilt established the pattern that would be followed by the railroad and utility magnates. Hetty Green was a miser. The Mitsui, whose fortune was founded by Hachirobei Mitsui more than two hundred fifty years ago, were a dynasty rather than individuals; in a sense they practised

the ultimate of socialism. Cecil Rhodes was the practical dreamer of empire. Basil Zaharoff was the prototype of the merchant of death. Mark Hanna was an early business man in politics; he helped set the precedent which reached its full fruition in the Chamberlain odyssey to Munich in 1938. John D. Rockefeller built; many though his faults were and hypocritical as he often appeared, at least he contributed something to mankind and was not entirely a leech on the body economic. And J. Pierpont Morgan was the archetype of those who, without the handicap of any great personal scruples, grow wealthy from using other people's money.

As is inevitable in any attempt to treat such diverse characters and to cover such a wide field, the quality of these sketches varies greatly. After reading these pages Zaharoff is still as much of a mystery as ever. Despite the author's obvious respect for Robert Owen, the sketch of him is not inspired. Nor is that of Jacob Fugger. On the other hand, Hetty Green is made to live again in all her eccentricity. To most Americans the story of the Mitsui is new and intriguing. Mark Hanna's career is still too commonplace; but the dreams of Cecil Rhodes remain fascinating. And if Mr. Flynn has substituted a touch of admiration for Rockefeller for his former scorn, he has reserved all of his vitriol for Morgan.

The professional historian will find little new in these pages. Mr. Flynn has not tried to unearth minutiae of economic developments. But he has tried to make economic history readable, and he has succeeded. *Men of Wealth* is a lively and entertaining recital of facts and developments of importance today.

Washington, D. C. E. G. CAMPBELL

A History of Economic Ideas. By Edmund Whittaker. New York: Longmans, Green and Company, 1940. Pp. xiv, 766. $4.00.

The most noteworthy feature of this book is the method adopted by the author for the presentation of his materials. Instead of treating the subject as a whole in chronological order, he has chosen to break up the broad subject into its various aspects and to treat chronologically each of these in turn. Thus the successive chapters, instead of being devoted to periods or "schools" of economic thought, constitute a series of loosely connected essays on the development of economic ideas with respect to wealth, individualism, property, social reform, nationalism, population, production, value, rent, and so on.

Such a method of presentation certainly has advantages. First, it permits closer attention to the successive steps in the development of particular contemporary doctrines; hence the continuity in the growth of economic thought receives greater stress than under other modes of treatment. Second, for the student who views the study of the history of economic ideas primarily

as a means of strengthening his understanding of contemporary developments in theory, there is probably some greater convenience in the topical approach and possibly also some greater stimulus to the student's interest in the subject.

On the other hand, it must be admitted that Professor Whittaker's method of presentation sacrifices of necessity some clarity of view as to the interrelation of the several doctrines of a given individual, group, or school. One gets from the book, for example, no conception of the Ricardian system of value and distribution theory as a whole. Marshall finds some place in nearly every chapter; yet it would be impossible to obtain from the book anything like an adequate conception of Marshallian economics as a systematic whole. The author anticipates this criticism by pointing out (p. vii) that most students of the history of economic thought are not interested in the ideas of a particular individual or school as such, which may or may not be true. I am inclined to think, in any event, that something important has been lost here. The history of economics is not simply the sum of the history of economic ideas with respect to value, rent, wages, etc., but is also the history of *systems* of thought as such. Even if it be granted that the primary purpose of the study for many students is to obtain a better understanding of contemporary theory, I doubt whether this purpose can best be served by an approach that fails to bring out any contrast between, let us say, the Marshallian, the Walrasian, and the Keynesian systems.

It does not follow, of course, that Professor Whittaker's book is not a useful addition to the available literature on the subject, but it does follow that his method of presentation probably should not be used alone. Certainly students of the history of economic thought will find it helpful to approach the subject with the topical method of presentation now made more conveniently available to them.

A second feature of the author's approach is his attention to the ends or objectives that concerned the writers of different schools or periods. The stress is justifiable, and it serves to facilitate an understanding of the doctrines of the canonists, the mercantilists, and other groups of writers for whom the objectives of economic policy were different from those of most contemporary economists. But there are pitfalls here, and Professor Whittaker appears to have slipped into one of them. For although one may in part *explain* the development of a particular doctrine in terms of the generally accepted objectives of the times, it does not follow that the doctrine is thereby *justified* as an accurate and useful piece of analysis of the behavior of economic phenomena. But Professor Whittaker implies (pp. vii-viii, 745) that if the policy is an effective one in terms of the objective for which it was designed, then the economic analysis which constituted the basis for the policy should also be accepted.

The wide range of time and materials covered by the book is also worthy of note. The attempt has been made to draw wherever possible upon the contributions of cultural anthropologists with regard to primitive life and institutions, and upon those of economic historians with regard to later developments. The range of the book is "from the beginning to the present" (p. viii) and even such contemporary economists as Keynes, Chamberlin, Hawtrey, and Hayek receive brief treatment in the appropriate chapters. Of course the ambitious range of the book carries with it certain disadvantages. The book is too long, for one thing. For another, the brief discussions of the customs of primitive peoples do not appear to add anything to the history of economic thought as such, except in so far as one may be justified in making inferences as to the thinking of primitive people upon the basis of their institutionalized behavior. Finally, the inclusion of numerous contemporary writers not only lengthens the book but also, since all of the important contemporaries cannot possibly receive treatment, forces upon the author an embarrassing problem of selection. Why, for example, has he included Chamberlin and Robinson in his chapter on value theory, Schumpeter and Keynes in his chapter on interest theory, yet excluded discussion of Hicks or Douglas from his chapter on wages, and of Lerner or Lange from his chapter on theories of social reform? I am not suggesting that these particular writers should have been included, but merely citing them to illustrate the difficulty involved.

The book is a careful, scholarly, painstaking piece of work. When consideration is given to the immensity of the task, the amount of condensation and selection of materials that has been necessary, and the difficulties inherent in the author's selected method of presentation, the successive chapters appear well done. But the necessities of condensation frequently give the reader the impression that he is confronted by a chronologically arranged catalogue of the views of different individuals on a given topic rather than by a smoothly moving story of developing theory. Too many writers come in for too brief consideration. I realize of course that a truly satisfactory treatment of any one of the topics that constitute chapter headings in Professor Whittaker's book would most certainly require at least a full volume to itself; but once he has chosen to write a condensation, I believe he would have been wiser to have reduced considerably the number of writers mentioned or discussed. I am also one of those who would vote against the inclusion, in fine print, of frequent and long quotations "for the purpose of allowing the leaders of economic thought to tell their own stories" (p. ix); but this is a matter upon which opinions probably differ.

When so much ground is covered in so little space it is to be expected that there should also be some differences of opinion with regard to some of the author's interpretations of the writers discussed. I was sorry, for

example, to find that Professor Whittaker has helped to perpetuate the old error of attributing to Aristotle the belief that money was barren (pp. 375, 517) as well as that of giving credit to Aristotle for having distinguished between value in use and value in exchange (p. 407). Nor do I believe that he has shown sure insight in the following characterization of mercantilist policy (p. 289): "All in all, it is clear that the public good that was aimed at by the Mercantilists was a prosperous and contented State, independent of others for the means of its existence." There is also reason to doubt whether he is justified in attributing to James Anderson an interest in the principle of diminishing returns (p. 385), or to Quesnay a suggestion of the principle of increasing returns (p. 387). Nor is he quite fair to Adam Smith when the latter's ethical position is said to have been "that men's actions were governed by their desire for the approbation of others" (p. 102).

Professor Whittaker attributes to Ricardo the implication that, at the margin of production, labor was responsible for the whole product (p. 374). Further evidence that the author had probably overlooked the fourth and fifth sections of Ricardo's first chapter is to be found in the omission from the statement of Ricardo's theory of value of any mention of the important qualifications to the labor theory which involve the effects upon relative values of variations in the rate of wages (pp. 424–425). It is not surprising therefore to find the author involved in further difficulties when he comes to appraise Ricardo's theory of profits (p. 613).

It is a small point, I suppose, but I must admit that I do not like to see Friedrich List classified as a romanticist (p. 124). Nor do I believe that it is quite accurate to say that he preached the doctrine of national self-sufficiency (p. 306). Marshall's conception of the short-run period is poorly defined (p. 454), and his theoretical analysis of the supply schedule of labor is, I believe, done considerably less than full justice when it is said to involve "a certain amount of use" of the conception of a subsistence wage (p. 577).

Stanford University B. F. Haley

The Cambridge History of the British Empire. General Editors, J. Holland Rose, A. P. Newton, E. A. Benians. Vol. II: *The Growth of the New Empire, 1783–1870*. Cambridge: The University Press, 1940. Pp. xii, 1068. $10.50.

The years between the loss of the American Colonies and the rise of the new imperialism after 1870 cover many momentous and disparate movements within the Empire—the ending of the slave trade and of slavery, a remarkable migration from the British Isles to new lands, the declining value and place of the West Indies, the exploration of Africa and the growth of British enterprise in the wake of exploration, the rise of colonial self-govern-

ment, the evolution of colonial and commercial policy as conditioned by the Industrial Revolution. The contributors who have handled this wide variety of subjects are well known, though not all are well known for their work in imperial history. The one American contributor, Professor Knaplund, has written an excellent chapter on Colonial Policy between 1815 and 1837.

There are nearly nine hundred pages of closely packed text—a bulk that might well justify some grumbling by the reviewer! So here it is: the volume is too large, indeed it is the largest of the seven so far published. Moreover, in some of the chapters (in those on the French Revolution and the struggle with Napoleon, for instance), the imperial emphasis seems rather secondary. The chapter on Anglo-French rivalry verges on ground already covered by the Cambridge History of British Foreign Policy. The treatment of transportation has already found its place in the volume on Australia, and those on the Straits and the Routes to the East would seem better related to the history of India. Hence this volume could have been considerably shorter and yet useful.

The chapters on colonial policy and the development of the Crown Colonies are valuable, for here the ground has not been so thoroughly covered, especially for the first half of the century. The economic aspects of the imperial development is the subject of three important chapters; it is rightly emphasized, for the Second Empire was more noteworthy for the trade growing out of the Industrial Revolution than for territorial expansion. The period before 1820 is presented by J. H. Clapham largely in terms of the materials of export and import. The free-trade movement from 1820 to 1853, by C. R. Fay, is handled more from the point of view of policy. It was a surprise to find that he regards Palmerston and Stratford Canning as more important free-trade successors of Huskisson than Peel and Gladstone (p. 409). H. J. Habakkuk's discussion of free trade and commercial expansion between 1853 and 1870 is a valuable, fresh handling of the subject. Much light is thrown on the complexities and character of British capital invested abroad.

The bibliography is up-to-date and, to say the least, adequate: it covers pages 883–1004. It is more than adequate, since there has been some duplication, for instance, in the Collected Historical Records, pp. 938, 943. Nor do I see the need for giving fifteen pages to a Select List of Parliamentary Debates, when the chapters are so abundantly footnoted. The excellent index will make this encyclopedic work one of standard reference and of real value.

Oberlin College HOWARD ROBINSON

Industry and Government in France and England, 1540–1640. By John U. Nef. [Memoirs of the American Philosophical Society, Volume XV.] Philadelphia: American Philosophical Society, 1940. Pp. x, 162. $2.00.

For Professor Nef, life still begins at 1540 and ends at 1640. The round dozen articles he has published during the last decade on different aspects of that period have revolutionized our understanding of the sixteenth and early seventeenth centuries. The present essay is "intended to form part eventually of a long work on industry and civilization," and is as welcome an installment as were those on technology, industrial history, and real wages. It is an essay in relations and in comparisons. What influence did state interference exert on industrial development? What effect did industrial progress have on the form and powers of government? And how did the English and French answers to these questions differ? Dismayed by the world's sickness today, Professor Nef believes that the answers to such historical queries may have value for our age. I doubt whether his conclusions will help us much to get through the fury-swept forties; but in any case his analysis and interpretation round off in clear concise form the work which Heckscher, Tawney, C. W. Cole, and he himself have done.

The essay contains four short and two long chapters. The basic facts on the industrial side are the expansion of old industries and the growth of such new ones as the production of coal, metals, alum, glass, gunpowder, soap, beer, and light or heavy metal goods; the much more rapid advance of these new industries in England than in France; the increasingly capitalistic organization of production; the growing financial interest of English merchants and "improving landlords" in this whole development, and the relative apathy of their French counterparts. On the political side, the outstanding events are the regulation of industry by the central government in both countries, and participation by rulers in some industrial enterprises; the framing of financial and agrarian policies; the triumph of the French crown over the third estate, and the defeat of the Stuart rulers and their policies by an alliance of land and trade. The interaction of these factors is skillfully worked out, with sufficient use of case histories to prevent the essay from being undiluted generalization. One of many conclusions is that the English landed and mercantile classes were so deeply interested in industry, and so powerful as local justices and parliamentarians, that they could resist or nullify any regulations or policies they thought harmful to industrial expansion; and at the same time they could prevent the crown from taking from them money which they wished to use as capital and which the state might have used to employ officials to enforce regulations or invest in royal manufactures. French rulers took a much larger slice of the national income, and while this reduced the supply of private capital it allowed the king to employ an enforcement squad and to subsidize occupations which produced

quality or artistic articles. France was strong on subsidized art, England on privately developed production of comforts and necessaries on a large scale.

One might criticize such mannerisms as the use of vague quantities—"scores," "hundreds and sometimes thousands," "many millions," etc. And one is loath to accept Massinger, Congreve, and Wycherley as good photographers of the taste and standards of the English new rich. Quite apart from their own standards, which I believe owed something to artistic France, was their "stage bourgeois" any more real than the "stage Irishman" or the "stage professor"? But these are trifles. The essay is both stimulating and provocative, and we are deeper in debt than ever to its author. We are also in debt to its publishers; when a Philosophical Society sponsors a study in economic history, a special "Thank you!" is in order.

University of Minnesota HERBERT HEATON

Eastern Workingmen and National Land Policy, 1829–1862. By Helene Sara Zahler. New York: Columbia University Press, 1941. Pp. x, 246. $2.25.

This book, which is the product of much faithful labor, would have been improved by bringing George Henry Evans more constantly into the narrative—some of its best passages concern Evans—or by making National Reform a central rather than a tangential theme. Either Evans or National Reform more nearly deserve titular recognition than do the "eastern workingmen." Lacking a well-sustained point of view, the narrative branches into paths trod by writers such as G. M. Stephenson and, while supplementing their work, loses sight of fresher subject matter. Chapter IX, which describes the by-play, the arguments, and counter-arguments which accompanied the homestead idea, 1854–1862, is especially interesting.

Many of Dr. Zahler's fugitive data are of more interest than her general account. One is grateful to have Fourierism, the Anti-Rent Wars, Dorr's Rebellion, the Industrial Congresses, Chartism, British agrarianism, and various reform movements brought into intelligible relevance to National Reform. More of this sort of thing would be welcome. Interesting mention is made of a considerable number of national reformers from the East and Middle West, together with comments on the success of the movement in various parts of the country. Regrettably, the bibliography overlooks a recent paper on National Reform in Chicago by Joe L. Norris (*Papers in Illinois History,* Springfield, 1938). Regrettable also is the reference to "Aurora county, Indiana" (p. 155) since there is no such county.

It would have strengthened her case if the author had more definitely shown that public men were actually motivated by the arguments of National Reform. Its principles were so patent that almost any person, indignant at

land abuses, would have arrived at arguments resembling those of the Reformers. Yet this criticism may be unreasonable. Successful politicians seldom confess the origin of their ideas, especially if their ideas stem from a minority movement having organs with names such as *Subterranean, Red Republican,* and *Radical;* and since, as the author usefully recalls, "agrarian" succeeded "Jacobin" as a term of abuse, to be followed by "Red Republican," "Socialist," and even "Communist."

Although the author sought to disclose the workingmen's interest in land reform, she reluctantly decides that their interest was never great (pp. 69, 181). One may suggest that Dr. Zahler is entitled to offer this lack of interest—gold is where you find it—as a useful contribution to the "safety valve" debate which has recently flourished, sometimes with such refinement of method and logic as to obscure its practical value; for her negative finding seems admirably to corroborate the belief of Goodrich and Davison that wage earners benefited from the westward movement by lessened competition from farm workers rather than as actual migrants to farms.

St. Lawrence University RICHARD L. POWER

Economic History of the United States. By Chester W. Wright. New York: McGraw-Hill Book Company, 1941. Pp. xxviii, 1120. $4.00.

Within the limits of some 1120 pages Professor Wright has included an account of the major factors contributing to our economic development as well as a description of many of the minor influences. While the main emphasis is upon the evolution of economic institutions, attention is given to noneconomic factors which have affected economic life, and to the influence, in turn, of economic forces upon general historical development. The organization of the volume shows the long experience of the author in presenting the material in the classroom. Among the features that should have an especial appeal to students are the frequent summaries, both of individual topics and of important periods, the large number of maps and charts, which are clearly presented and carefully integrated with the textual material, and the concise statements of the economic principles involved in the study of the various topics. This last item is especially noteworthy. Most classes in economic history include students who, because their knowledge of economic theory is either limited or hazy, can profit by these brief reviews.

Professor Wright states the principal object of his book to be a study of, "The history of the processes of adopting our environment to meet our wants, the evolution of industrial society in the effort to obtain a better living." He approaches the problem from a functional rather than an institutional point of view. Considerable attention is given to the quantitative and qualitative changes which have occurred in the four major factors of production. Land policies acquire significance in their effect on the supply of

natural resources for use, financial institutions for their influence on capital formation, immigration as it contributes to the labor supply. Technical changes are important as they modify the quality of factors and permit more effective combinations. The distribution of income, functional and personal, is described for various periods of time. On the whole this approach to economic history is quite successful. It emphasizes the basic factors that have determined the size of our national income over time. It is an approach that should appeal to many teachers of the subject, especially those who attempt to describe the operation of economic principles in a historical setting. To be sure there are some difficulties involved in the quantitative measurements, especially for the earlier periods, but this fact does not detract seriously from the value of the functional treatment.

Perhaps the most serious limitation of Professor Wright's treatment is his failure to make clear the elements involved in the process of economic development. He suggests (p. 1) that an evolutionary process is discernible in our history but he fails to give any adequate discussion of the sequence, especially in respect to the dynamic factors involved. What or who is primarily responsible for the changes that occur in our economic life? Perhaps Professor Wright does not accept the role of the innovator as analyzed by Professor Usher or Professor Schumpeter; yet any treatment of the adaptation of our economic institutions calls for a consideration of this subject, if only by way of refutation.

Specialists in various fields will no doubt take issue with the author on certain points. The discussion of the factors influencing the location of industry, for example, is confined chiefly to a listing of possible causes without utilizing the theoretical material stimulated by Alfred Weber's work. There is also a lack of technical detail in the treatment of various processes of production.

In spite of these criticisms, there is little question that Professor Wright's book deserves to take its place as one of the most popular and teachable texts in American economic history.

New Haven, Connecticut HAROLD F. WILLIAMSON

Recent America: A History of the United States since 1900. By Henry Bamford Parkes. New York: Thomas Y. Crowell Company, 1941. Pp. viii, 664. $4.50.

How recent is "Recent"? And how much "background" is needed to understand it?

In order to have a fairly lively recollection of the assassination of McKinley, a man must have been alive about half a century or much the better part of his life. In the life of a college student (and this book appears to be intended prmarily for college students) forty years are not exactly "recent."

But terms are relative and I would not be inclined to make a mountain out of a molehill except for the fact that Professor Parkes finds it necessary to devote exactly a third of his text to "background," which he calls "The Heritage of the Nineteenth Century." In the fourteen chapters of this the longest division of the book, the author roams up and down the nineteenth century to make a sort of sociological, economic, and even cultural survey of this country as it was about the year 1900. The job is not badly done but one wonders why it appeared to the writer to be necessary. Either the students taking a course in which this book is to serve as the basic text know about the nineteenth century or they don't. Every course in history has to begin somewhere, and except for a little running start, it might as well begin from scratch.

The systematic history of the twentieth century—the remaining two thirds of the book—is divided roughly by decades into four more or less equal parts. Respectively these are called: "The Progressive Era"; "The World War"; "The Twenties"; and "The Thirties." Had this part been written ten years ago (with the exception of the last division, of course) a reviewer could justly have employed such phrases as "freshness of approach," "originality of interpretation," "unique in its emphasis upon social, economic, and cultural forces." But in ten years a lot of water has flowed over the dam. A dozen or more texts covering the "recent" period have been written and some have undergone one or more revisions. Of each of these the quoted phrases could be and actually were used. Professor Parkes's book is no better and no worse than the average of these.

Hence this is just another entry into the great college textbook sweepstakes, running for its share of the grand prize—royalties for the author and profits for the publisher. In the race the relatively high price may prove a handicap. When it is noted that there are very few graphs and maps (no colored ones) and no pictures of any sort—in short, no expensive bookmaking devices of any kind—it appears that the price of the book may be out of line with its chief competitors. However with proper advertising and zealous pushing by an efficient staff of the publisher's "good-will" peregrinators it may very well "show" or even "place."

B. B. Kendrick

Woman's College of the University of North Carolina

The Huancavelica Mercury Mine. By Arthur Preston Whitaker. Cambridge: Harvard University Press, 1941. Pp. xiii, 150. $2.00.

In colonial Peru the silver mines of Potosí and the mercury mine of Huancavelica were likened to "two poles which support this kingdom and that of Spain." The silver helped to replenish the Spanish treasury; the mercury, after the perfection of the amalgamation process, was indispensable to the production of silver. That is not to say that Huancavelica quick-

silver was indispensable to Potosí. Much of the time the mercury produced in Potosí's back yard had to be protected from the competition of the mines in distant Almadén.

From 1570, when the mine was expropriated in the name of the crown, until 1779 the quicksilver was produced jointly by the miners' guild of Huancavelica and the royal authority. The colonial government was responsible for furnishing the necessary labor force (the Indian *mitayos*), while the guild contracted to supply, at a fixed price, a certain amount of mercury for each worker employed. The *asiento* was exclusive for the mining of mercury in America. Except when smuggling defeated its purpose, the government was able to obtain its legal share of newly mined silver by taxing the producers on the basis of deliveries of mercury at the silver mines. Judged by output alone, the mercury monopoly was fairly successful until the end of the seventeenth century. A fall in output, coupled with widespread corruption, led to the familiar eighteenth-century investigations and recommendations for reform. Direct government operation was tried for a few years, and at the close of the century the mining was thrown open to free private enterprise.

As "a contribution to the history of the Bourbon renaissance in the Spanish Empire," Professor Whitaker's study reveals some of the mixed blessings of this age of enlightenment. The *mita* failed and forced labor gradually gave way to free labor, for which no thanks are due to the crown; ventilation of the mine and other improvements in technology took place largely in spite of the general apathy of the guild; and the perspicacity of officials like Ulloa was offset by the weakness of the viceregal authority. The vicissitudes of Huancavelica further serve to illustrate those oft-encountered contrasts of Spanish government and economic organization: individual honesty, industry, humanity, and administrative genius on the one hand; dishonesty, cruelty, sloth, and incredible bureaucratic inefficiency on the other.

This study is not a detailed case history of the mining industry. For such a work the author points to a mass of unused materials which should be studied "by a corps of historians, accountants, and metallurgists." Yet, the narrative cannot fail to interest the economic historian who still looks for light on the relation of Spanish policy and colonial administration to the rise and decline of enterprise in the Hispanic world.

Duke University ROBERT S. SMITH

The Cost of the World War to Germany and to Austria-Hungary. By Leo Grebler and Wilhelm Winkler. New Haven: Yale University Press, for the Carnegie Endowment for International Peace, 1940. Pp. xv, 192. $2.50.

The first part (two thirds) of this volume is filled by Dr. Grebler's study on "The Cost of the War to Germany." After a brief but comprehensive survey of the pre-war situation and trends of the German national economy, the author analyzes the effect of World War I on German industry. The aggregate output declined as a consequence of military mobilization of man power and the restriction of raw material supplies. Neither state control nor profit incentive was able to maintain industrial output at its pre-war level; but after a period of confusion they succeeded in profoundly changing the nature of industrial activity and the composition of the national product. Labor reserves were tapped, workers and equipment shifted over to the making of munitions. The German Government, originally unaware of the economic problems of modern war, assumed control functions of ever-broadening scope. While the "war seemed indeed to demonstrate that a highly sensitive industrial apparatus, under conditions of modern capitalism and the stimulus of profits, is remarkably adapted to meet almost any emergency" (p. 37), it showed no less conclusively that the effectiveness of the apparatus depends primarily on the government's planning and coördinating activities. Failure of the government to assume these functions permits the industrial machine to produce dangerous social strains and insufficient output.

Dr. Grebler impressively describes the manifold contributions of the war to the concentration of economic power in Germany. Mass orders of military equipment favored mass production and consequently the formation of large technical and economic units of production. "Farming-out" of orders made small firms dependent on large firms and contributed to horizontal concentration. So did the creation of "war companies" and the strengthening of cartels. Insecure supplies of raw materials or outlets for the products stimulated vertical combination in producers' goods industries. Planning of the flow of essential commodities limited the role of wholesale traders and commodity exchanges. The cheapening of the stock of depressed industries (shipping, import business) helped Stinnes in building up a variegated industrial empire. Above all, price inflation stimulated the concentration of industrial property in the hands of few. On the surface, the post-war period brought a good deal of readjustment: some of the combines collapsed and direct state intervention decreased; but the trend toward the concentration of economic power was not reversed.

Dr. Grebler has made a careful and well-documented study which will prove valuable to the student of war economics. He has not provided an answer to the question implied in the title. Apart from a brief account of

government expenditures on war and war relief, there is no estimate of war costs in terms of money. But the author may be forgiven the desertion of the subject; for he has told another story, a story that is more interesting than the title leads one to expect.

I am afraid that the same cannot be said for Dr. Winkler's analysis of "The Economic and Financial Consequences of the World War for Austria-Hungary." This study is concerned with the direct and indirect monetary cost of the war, in other words with Dr. Grebler's topic; but in this case the substitution did not lead to a very satisfactory product.

First, the evaluation of the aggregate financial cost of a war is an exceedingly complex task. While the money cost of war equipment and army sustenance may be laboriously computed from government books—to the extent that they are available and trustworthy—the cost of destruction of life and property and the financial counterpart of forfeited possibilities of peaceful growth are largely subject to guesswork.

Dr. Winkler took great pains in computing or guessing these values; but others might make a no less convincing case for a different procedure and result. For instance, the author's procedure of estimating the cost due to losses of life, disablement, damage to cultivated areas, factories, and private dwellings by the amount of indemnities paid may be attacked as leading to a systematic underestimation of damages. Other technical deficiencies appear in connection with the correcting of government expenditures for the decline in the purchasing power of money during the war: the "index numbers of prices" offered by Dr. Winkler without further explanation (p. 119) seem to represent two different things; for Hungary, they are apparently based on wholesale prices, for Austria, on some retail prices. Several items in Tables 2 and 6 differ from the quoted source.

Second, the scientific relevance of estimating the cost of a war to a nation may be questioned. Generally speaking, estimates of costs are designed to facilitate decisions as to whether or not action involving that cost should be undertaken. The decision is based on a comparison of cost and return, of loss and gain. It costs many dollars to build an automobile; still, a factory will build automobiles if the management expects that consumers will pay the price. The waging of war is expensive business to a nation; still it will fight if the expected gains rank high enough in its scale of values. According to Dr. Winkler it cost Austria-Hungary 123 billion gold kronen to fight and to lose World War I, counting direct war costs (expenditures on military forces and internal indemnities) and some indirect costs (losses of stocks and deterioration of property). That is a very impressive amount; but even a tenth of it would be impressive enough an investment in a losing business. On the other hand, it is conceivable that a country might make twice or thrice that sacrifice in order to create a more desirable state of

national and international affairs. Any estimate of the money costs of a past war to a nation, whatever the cost concept and the accuracy of measurement may be, is useless for rational decisions in the present or in the future. These decisions must be based on the contemporary political and military picture of the world, new techniques, and a new social scale of values.

To the extent that inferences are to be drawn from past experience, they can be obtained more readily from accounts of developments in individual industries, preferably in physical terms, than from a general balance sheet in terms of money. Dr. Winkler's work would have been more useful if instead of making the detailed account of physical processes incidental to the drawing up of the balance sheet he had neglected the latter and concentrated on the story of the war-time transformations in the Austro-Hungarian economic system.

National Bureau of Economic Research HORST MENDERSHAUSEN

The Newsprint Paper Industry, an Economic Analysis. By John A. Guthrie. Cambridge: Harvard University Press, 1941. Pp. xxiii, 274. $3.50.

Although the consumption of newsprint has increased remarkably since the beginning of the present century, Mr. Guthrie nevertheless concludes that no great expansion is likely to occur in the present newsprint industry. This forecast is based not on radio or outdoor advertising competition, but on a general flattening out of the rate of increase in per capita newsprint consumption and on the effect of general business conditions on expenditures for newspaper, magazine, outdoor, and network radio advertising.

Technical aspects of newsprint production point to the economic superiority of wood as a raw material in the manufacture of newsprint. Financial organization and reorganization have resulted in a greater concentration in the control of pulpwood. The freedom of newsprint from tariffs "after 1913" was an important cause of the shift to Canada. The shift, though inevitable, was accelerated by the coincidence of the United States tariff action and Canadian pulpwood embargoes.

Probably the best chapters in the book are those on "Monopolistic Elements in the Newsprint Market" (VII) and "Price Determination and Price Policy" (VIII). Many factors moderate the effects of free competition in the newsprint market; of principal importance are trade associations and other voluntary organizations of consumers and producers. Their monopolistic influences, however, are upset in times of financial stress by economic circumstances creating competitive conditions. Hence the recurrence of price wars. Moreover, large and powerful buyers must negotiate with large and powerful sellers. At the same time the large capital investment, slow capital turnover, and an inelastic demand have tended to promote the custom of price

leadership; as a result, "The existence of balanced bargaining between large producers and consumers usually resulted in a price which would not differ widely from a purely competitive figure."

Part II compares the competitive position of the principal producing regions as to the main elements of cost: wood, wages, power, transportation, and interest. In relative total costs the regions are rated (low to high): (1) Pacific Coast; (2) Quebec; (3) Ontario; (4) Lake States; (5) Maine-New York. If Maine alone is considered, it would probably rank fourth.

The book closes with an appraisal of governmental and private policy as it affects the industry. The present excess capacity is given as the most pressing problem facing the industry today. Provincial governments, mill managers, and investment bankers are all criticized for the orgy of building in the 1920's.

Absence of a United States tariff on newsprint has on the whole been beneficial. For continued efficiency the financing of newsprint mills should be carried out with less rigid capital structures than was the style in the 1920's. Conservative capitalization and low bonded indebtedness should be the rule if the industry is to weather the recurrent upheavals of the business cycle.

The appendices are well organized and contain a great deal of original data. The bibliography is carefully selected. Mr. Guthrie is to be congratulated for his thoroughness and his clear exposition of an important industry.

New York LOUIS T. STEVENSON

The American Carpet Manufacture: A History and an Analysis. By Arthur H. Cole and Harold F. Williamson. [Harvard Economic Studies, Volume LXX.] Cambridge: Harvard University Press, 1941. Pp. xiv, 281. $3.50.

The American carpet industry, "one of the more venerable of domestic branches of manufacture," has been neglected by economic historians. Cole and Williamson have made amends by a valuable and exhaustive study. The history of carpet production from the first settlement of the country to about 1845 was notable for three reasons: the introducion of floor coverings, the manufacture of a superior product on a factory scale, and the winning of the domestic market for at least one group of carpetings (the popular ingrain fabric now of historic interest only). In the "Transformation" period, from 1850 to 1870, Bigelow applied power to all kinds of carpet looms, and Alexander Smith perfected his highly complicated Axminster loom. As a result, carpetmaking passed from a hand to a machine industry.

From 1850, when 6,000 wage earners in 116 establishments produced slightly more than $5,400,000 in carpet value, there has been a steady decrease in the number of plants and a large increase in the number of wage earners. The peak was reached in 1925 when 34,000 wage earners added a

value by manufacture of $102,000,000. In no other year has volume exceeded or reached the 83,000,000 square yards produced in 1925. In 1937, for example, 55 establishments employing about 31,000 wage earners produced slightly less than 65,000,000 square yards.

Expansion in volume of production was accompanied by a shift from a smooth to a pile surface, a steady advance in quality, styling, and coloring, and the advent of broadlooms which produced the "seamless" rug or carpet. The persistent tendency toward ever larger units the authors attribute to potent economies inherent in large-scale operations. Large firms have been formed by amalgamation of mills making different, noncompeting products into large units making all types, as well as by mergers of competing mills. Few children have ever been employed in the carpet industry but women form an important labor force. Skilled labor, notably weavers, early drawn from Scottish and English centers, have been organized in craft unions from early periods. Marketing procedure has changed materially with altered conditions. Producers have effectively attacked marketing problems as conditions have required, until today they have absorbed, to a considerable degree, jobbing and merchandising functions.

In its illuminating text, its copious footnotes, its numerous tables, this volume adds a significant chapter to textile history of which the industry itself is duly proud and for which it is profoundly grateful.

New York KING HOAGLAND

Exchange Control in Central Europe. By Howard S. Ellis. Cambridge: Harvard University Press, 1941. Pp. xv, 413. $4.00.

Probably the most distinctive feature of international economic development after 1929 was the growth of governmental interference with foreign-exchange operations. While exchange control of one sort or another was by no means new, the form and extent of exchange controls from 1931 on were entirely without precedent. In many quarters, exchange control has come to enjoy a very considerable prestige. This would seem to be primarily the result of *post hoc* reasoning: Germany has been the outstanding exemplar of exchange control; Germany has achieved spectacular things; therefore, exchange control is a miraculous discovery which must, because of its superior efficiency, supplant accustomed methods of conducting international financial operations.

Professor Ellis provides the basis for a much more realistic interpretation of exchange control, and an appraisal a good deal less favorable. While more comprehensive compilations, particularly of the legal and administrative provisions, are available, this is without question the most adequate

and competent treatment of exchange control.[1] The first chapter deals with the nature of exchange control and the last is concerned primarily with an evaluation of its accomplishments and its limitations. These two chapters by themselves constitute the best brief summary of exchange control to be found anywhere. The intervening chapters are devoted to a detailed examination of the working of exchange controls in Austria, Hungary, and Germany, countries where the experience with exchange control was particularly enlightening.

Especial interest attaches, for obvious reasons, to the section on Germany. It is probable, writes Professor Ellis, that "exchange control produced a net reduction in the economic 'total gain' of Germany's foreign trade" (p. 287). Various supposed benefits, such as a reduction in foreign indebtedness, had little if anything to do with exchange control; "After 1933 it is difficult to discover justification for exchange control as a monetary and financial measure; its aims became 'ulterior' " (p. 283). These aims were, indeed, "ulterior to any economic calculus" (p. 284). Exchange control in Germany "really signified foreign trade control" (p. 285); "The institution persisted because it was an instrument *par excellence* of political power—political power not only over other states but equally significantly over vested economic interests within the country" (p. 289).

As a more or less temporary device, particularly to restrain a flight of capital or to ease adjustments in the balance of payments, a good case can be made for exchange control. Moreover, it is extraordinarily effective as an instrument of totalitarianism where the purpose is to exercise discrimination both internally and externally and at the same time to conceal what is actually going on. But no one can read this book and still retain any illusions concerning the long-run virtues of exchange control as an economic measure.

University of Pennsylvania C. R. WHITTLESEY

Shorter Notices

Great Britain under Protection. By Frederic Benham. New York: The Macmillan Company, 1941. Pp. 271. $2.50.

Mr. Benham gives a balanced and judicious analysis of the development of British protectionist policies during the past decade. He begins with a brief chapter reviewing the achievements of the free-trade era, and the collapse of the free-trade tradition. He then turns to a detailed, but nontechnical, exposition of the operation of the system of tariffs, quotas, and commercial policies relating to foreign countries and to the Empire,

[1] It was first published in virtually identical form as supplements to *The Quarterly Journal of Economics* for November 1939 and August 1940.

and to an analysis of the protectionist elements in British monetary policy. Mr. Benham succeeds very well in presenting an integrated picture of this government activity on many fronts but he is skeptical about the social utility of all this expenditure of political energy in trade regulation. The operation of protectionist devices in agriculture and in the iron and steel industry are singled out for special consideration, and these two chapters are among the most illuminating of the book. Mr. Benham concludes with an estimate of the part played by protectionism in British economic recovery of the thirties. He finds this part to have been distinctly minor; in fact he confronts us with this anomalous situation: British recovery was made possible by cheap imports, which freed consumer purchasing power for other expenditures, particularly in housing. It might have been supposed, according to good protectionist doctrine, that England's resort to protection had been employed to help turn the terms of trade in England's favor; yet, says Mr. Benham (and it is but one of many "sad thoughts" on his part), English statesmen professed to be interested in raising wholesale prices, and quota restrictions on imports were, more frequently than not, so administered as to permit the foreigner to charge more per unit for a smaller quantity.

Rutgers University MAX GIDEONSE

The Structure of the American Economy, 1919–1929. By Wassily W. Leontief. Cambridge: Harvard University Press, 1941. Pp. xi, 181. $2.50.

The economic historian will be interested primarily in Tables 5 and 6 of this volume. These give for 1919 and 1929 the value of output flowing from each of a large number of industries to consuming industries (including the households), as well as the intake by each industry from each of the supplying industries. The industrial divisions specifically covered in these tables are largely in the commodity-producing areas: agriculture (1); mining (4); manufacturing (34); rail transport (1); and public utilities (1). In addition to these specific industry accounts three other (consolidated) accounts are included: one for all households, one for all foreign trade, and one for all undistributed accounts, that is, the remainder of the industrial system.

These two detailed tables (presented in a more condensed form in Tables 7 and 8) are of unique value, particularly for industries whose output flows into a variety of channels or that derive their materials from variegated sources. They provide a quantitative guide to sale-purchase interrelations of various industries, and thus a basis for understanding the dependence of one upon the economic fortunes of the others. The general scheme used in setting up the tables is presented clearly in Part I (pp. 1–28); and the details of the statistical estimates are shown in Appendix II of the printed volume (pp. 141–162) and at greater length in a mimeographed supplement available on request.

University of Pennsylvania SIMON KUZNETS

J. Laurence Laughlin, Chapters in the Career of an Economist. By Alfred Bornemann. Washington: American Council on Public Affairs, 1941. Pp. ix, 98. $2.00.

Professor Laughlin was one of the most distinguished of that early group of American economists who marked out the path and set the standards for their successors. Unlike many of his contemporaries, Laughlin never studied abroad, and this fact explains the somewhat narrow intensity of his attitudes on American problems. But, on the other hand, it freed his teaching from an overemphasis upon the historical approach of the German school, and from reliance upon the lecture method of instruction which gave the student no opportunity for discussion. Laughlin believed that the theorist had

no right to shut himself away from the world and, as a result of his teaching, his students year after year turned out theses which were positive contributions to the questions of the day.

The book is interesting in spite of Mr. Bornemann's failure to make the best use of his material; it is awkwardly arranged, and does not fit Laughlin into his background. There is no index.

Vassar College MARGARET G. MYERS

Business Cycles, Their Nature, Cause, and Control. By J. A. Estey. New York: Prentice-Hall, Incorporated, 1941. Pp. xvii, 544. $5.00.

Instructors in undergraduate courses in business cycles will welcome Professor Estey's book as the most satisfactory text on this subject. Writers like Professor Estey are doing much to dissipate the frequently expressed feeling that economists have no literary style and that their subject is too complex to permit clear and simple analysis and exposition. He has avoided much of the obscuring jargon that has crept into the recent discussion of business-cycle theory. Without sidestepping controversial and intricate parts of the problem, *Business Cycles* is at once interesting, carefully organized, understandable, and convincing. I would take issue with the statement in the Preface that it "is not a work of research." Certainly it is more than mere reporting to create a useful tool for instruction.

Somewhat too dispassionate in its treatment of theories for the reader who wants direction to the most acceptable answer, minimizing too much perhaps the areas of agreement among writers, this book will nevertheless leave the student free to reach his own unbiased judgments. More attention could well have been given to statistical measurements and particularly to the verification of interrelationships among economic variables. Moreover, some instructors will find it necessary to resort to supplementary readings to supply the lack of historical description of types of American cycles. These are not major weaknesses, however, and this writer repeats the prediction that Estey's *Business Cycles* will have wide use as a college text.

University of Rochester DONALD W. GILBERT

Social and Economic Aspects of Swedish Population Movements, 1750–1933. By Dorothy Swain Thomas. New York: The Macmillan Company, 1941. Pp. xxiii, 487. $6.00.

This volume, providing exhaustive—not to say exhausting—statistical data and analyses of time series bearing on Swedish population movements, especially internal and external migration as correlated with industrial development and the swing of business cycles, was financed by the Rockefeller Foundation on behalf of the Institute for Social Science at Stockholm University and the Institute of Human Relations at Yale University.

Much labor has been expended on the fitting of curves and the calculation of trends, with meticulous regard for coefficients of correlation and probable error, but the author disclaims any intention of discovering "laws" of population movement. On the contrary, the object of research is the historical analysis of the interplay of demographic and socio-economic factors in producing internal differentiation of population and of communities (p. 5) or, more simply, the relation of population development to changes in the social and economic environment (p. 354).

Such a volume as this—it is one of three in process along the same lines—will doubtless be of considerable value to Swedish students, and also to economic historians

interested in the early geographical expansion of Swedish agriculture and the later industrialization of the country. It will probably be regarded everywhere as a model of statistical research in historical demographic and industrial movements. The reviewer cannot avoid the feeling, however, that a large part of the enormous expenditure of labor and of the sizable monetary cost of the undertaking could better have been used in other directions. To too great an extent the 92 tables, the 70 charts, together with the text, demonstrate the obvious.

Ohio State University A. B. WOLFE

Some Experiences of Economic Control in Wartime. By Sir William Beveridge. London: Oxford University Press, 1940. Pp. 38. 40 cents.

Wartime Control of Prices. By Charles O. Hardy. Washington: The Brookings Institution, 1940. Pp. 216. $1.00.

Both Sir William Beveridge's lecture and Dr. Hardy's book represent that rare achievement, the presentation of economic argument in such a manner that it can be followed by the intelligent general reader.

Making use of his experiences in the British Board of Trade and Ministry of Food during World War I, Sir William outlines briefly some lessons pertinent to the conduct of this war under the headings "Labour in Wartime," "Some Lessons of Food Control," and "The Alternating Bottlenecks of Totalitarian War." The lecture was delivered before the fall of France and the modification of American policy.

Dr. Hardy discusses the causes and possible preventives of wartime inflation in the first half of his book, and American experiences with price control during 1917–1918 in the second half. Regarding a price ceiling unfavorably as a preventive, he advocates a policy including maximum reliance upon taxes and savings (except at "the very outset of the mobilization program"), stimulation of domestic production and imports, and selective control of specific prices and wage rates, especially in industries producing primarily for the Government. His general conclusion is optimistic: "a serious inflation of prices in time of war can be prevented."

Nowhere in *Wartime Control of Prices* is there explicitly discussed the problem of whether full employment may not require a certain minimum rise of prices; the argument on p. 42 seems to imply that no price rise is necessary. Other controversial assumptions that seem to be implicit in parts of the argument are that price determination usually corresponds closely to the demand-supply analysis of the theory of pure competition (pp. 15, 54–55, 68) and that pressure from the labor side alone prevents wages from being "truly competitive" (p. 78). However, modification of these assumptions would not force substantial alteration of the analysis or the proposals.

Washington, D. C. HENRY M. OLIVER

Credit Union North America. By Roy F. Bergengren. Kingsport, Tennessee: Southern Publishers, 1940. Pp. vii, 390. $2.00.

Mr. Bergengren, one of the pioneers in the coöperative credit movement in the United States, has sketched briefly the historical development of credit unions in Germany, France, and Italy during the nineteenth century. He describes the origin of the North American movement in Quebec and its growth into ten thousand local unions spread over most of the continent north of the Rio Grande. The author writes in a reminiscent vein as one who has been a zealous worker in the cause of coöperative credit for a quarter of a century. The greater part of the book is designed more as a manual or textbook for those who might wish to form credit unions than as a scholarly study. Nevertheless, it offers the only up-to-date history and exposition of credit unions, and

is a very useful starting point for research into this very interesting form of coöperation.

Cornell College, Mount Vernon, Iowa EDWIN C. ROZWENC

New Directions in Our Trade Policy. By William Diebold, Jr. New York: Council on Foreign Relations, 1941. Pp. x, 174. $2.00.

After a thoughtful appraisal of the Hull Trade Agreements program, Mr. Diebold points out that the war has limited the territorial scope of this policy for the time being. Additional agreements may be made with Latin American countries; and, depending on political developments, there might perhaps be some chance for expanding the program in the Far East. The last two chapters show how our trade policy is being affected increasingly by political purposes, such as rearmament, aid to Britain, checking Japanese aggression, and economic defense of Latin America. In a future postwar period the author suggests that American trade policy should seek "laissez-faire's ends, but not by laissez-faire's means." Greater government participation and supervision in foreign trade will be necessary. The book is a competent and thoughtful job, well worth recommending to one who wants a rapid survey of these issues.

Fletcher School of Law and Diplomacy EUGENE STALEY

Dollars in Latin America; An Old Problem in a New Setting. By Willy Feuerlein and Elizabeth Hannan. New York: Council on Foreign Relations, 1940. Pp. vii, 102. $1.50.

Although the publication of this brief study may be justifiable as a measure of popular enlightenment, it is to be hoped that in future volumes the Council on Foreign Relations will undertake much more penetrating and detailed analyses of the problems of United States financial policy in Latin America. *Dollars in Latin America* is merely a survey of the disappointing past and of some broad alternative courses that future policy may follow. The second and third chapters (on dollar bond defaults and the status of direct investments, respectively) are largely recitations of well-known facts with emphasis placed upon the growth of nationalistic and social pressure on absentee property rights in Latin America since the nineteen twenties. The final chapter (on new directions in our Lain American policy) does little more than raise in very general terms a number of questions and proposals respecting inter-American financial collaboration. The Inter-American Bank is mentioned as one of "three main lines of policy already developing in Washington" that "may help to prevent the balkanization of Latin America by extra-hemisphere powers"; this discussion takes up only eleven lines (pp. 92–93). Earlier in the same chapter (p. 80) it is stated that "if our government, in collaboration with Latin American governments, could work out a free exchange system via the Inter-American Bank, at the same time fostering economic development with new loans, the dollar values of their currencies might be raised sufficiently to make them acceptable to our bond holders." Readers of a book in which such far-reaching suggestions are ventured are entitled to much more critical analysis.

Washington, D. C. HORACE G. WHITE, JR.

The European Possessions in the Caribbean Area; A Compilation of Facts Concerning Their Population, Physical Geography, Resources, Industries, Trade, Government, and Strategic Importance. By Raye R. Platt, John K. Wright, John C. Weaver, and Johnson E. Fairchild. New York: American Geographical Society, 1941. Pp. vii, 112. $1.00.

This is an excellent, compact presentation of information indispensable for an evaluation of the strategic problems of United States defense in the Caribbean. The descrip-

tive material respecting the British, French, and Netherlands possessions (eighty-five pages) is followed by a keen analysis of their strategic importance. Readers will be interested, if not disturbed, to be informed that Antigua, which is one of the islands on which the United States has leased sites from Great Britain for defense bases, "has a number of bays, but most of them are too shallow for any but light-draft vessels, and almost the whole island is surrounded by dangerous reefs and shoals," and that it "is without an established landing field and it seems doubtful if any part of the island is really suitable for construction of fields adequate for military purposes" (p. 91). The usefulness of the volume is enhanced by a classified reference list, a six-page index, and a map of the Caribbean region on which the political sovereignty and administration of the several possessions and other pertinent data are marked.

Washington, D. C. HORACE G. WHITE, JR.

Studies in Economic Warfare. By D. T. Jack, New York: Chemical Publishing Company, 1941. Pp. viii, 178. $4.00.

More than half of this little volume is devoted not to economic warfare but to the international law of neutrality and belligerency; here Mr. Jack contributes little, if anything, to the already considerable monographic materials. About one fourth of the remainder is a conventional account of the experiences of 1914–1918, again with undue emphasis on legal factors. The last chapter of forty-two pages deals with the period from September 1939 to July 1940. As Mr. Jack says, economic warfare itself is not new; of greatest contemporary interest are the new techniques of waging war with economic weapons. But the author makes no important contribution to an understanding of these new devices. He seems to be unaware that economic warfare preceded the outbreak of military operations. He appears to be unacquainted with the enormous German literature of *Wehrwirtschaft* and *Kriegswirtschaft;* at least, he cites no German authorities. He does not relate economic warfare to the larger problem of total war. It is difficult to see why this book was published at all and even more difficult to see why it should have been priced at four dollars.

The Institute for Advanced Study EDWARD MEAD EARLE

International Labor, Diplomacy, and Peace, 1914-1919. By Austin Van der Slice. Philadelphia: University of Pennsylvania Press, 1941. Pp. xi, 408. $4.00.

The importance of economics is given nowadays ample, sometimes too ample, recognition; hence the usefulness of examining, as this book does, the position of labor with respect to the settlements, proposed and enacted, connected with the Great War. Organized labor, especially on the Continent of Europe, could, to a great extent, be identified with the socialist movement; its main influence lay in the weight of opinion that it exerted on the general political situation. It is not perhaps sufficiently remembered that the general peace program associated with the name of Wilson had in large measure been anticipated by international socialism. The great majority of labor remained loyal to Wilson until bitterly disillusioned by the peace settlements.

The author covers the ground in considerable detail, but the limitation of his treatment to the United States, Great Britain, and France, although deliberate, is nevertheless a serious one. His arrangement leads to perhaps unnecessary repetition; why not, for instance, devote a separate chapter to the proposed Stockholm conference? There seem to be only minor slips, especially in the orthography of non-English words.

New York RENÉ ALBRECHT-CARRIÉ

Guide to the National Archives. Washington: United States Government Printing Office, 1940. Pp. xviii, 303. 40 cents paper, 70 cents cloth.

Over half of the records that had been transferred from various repositories to the National Archives by December 31, 1939, are described in this *Guide* in considerable detail; the remainder are listed in an appendix. A brief and accurate description of the history and functions of each record-producing agency is given, together with descriptions of the record groups and of the mediums that afford access to them. Material from the United States Senate, all ten executive departments, forty-five independent agencies, and four Federal courts is thus covered, and there is a good index to the volume. This *Guide* wholly replaces the earlier one printed in the Third Report of the Archivist of the United States. For those records that it covers, it also supersedes the pioneer volume of Van Tyne and Leland. Though obviously incomplete, it is nevertheless a very useful precursor of the formidable tomes which will some day constitute the definitive guide to the National Archives.

Bard College ABBOT SMITH

Residential Real Estate: Its Economic Position, as Shown by Values, Rents, Family Incomes, Financing, and Construction, together with Estimates for All Real Estate. By David L. Wickens. New York: National Bureau of Economic Research, 1941. Pp. xx, 305. $3.50.

This study is devoted mainly to a discussion of methods used in coördinating statistical material drawn from four main sources: the Census of Population, the 1934 Federal Real Property Inventory, the Financial Survey of Urban Housing, and the reports of the Bureau of Labor Statistics on building permits. These materials are supplemented by information collected by private real-estate organizations and city governments; consequently the study provides a most valuable handbook on sources and limitations of real-estate data.

More than half of the volume is given over to the tabular presentation of estimates: measures of real-estate values, of rents, and family incomes, both averages and distributions, cross-classified and broken down by geographic division and by size of cities. Estimates of these factors for tenant- as compared with owner-occupant families are also given. An equally full survey is made of residential construction, demolitions and vacancies. The sections devoted to financing of residential real estate provide detailed measures of term and size of mortgage, type of lending agency, interest rates, and amortization provisions.

The estimates, particularly on the value of total real estate, are breath-taking. It should be emphasized, however, that any imperfections or unevenness in quality derive from the original data rather than from the methods of analysis.

The related analytical studies based on this imaginative and scholarly statistical survey should be awaited with interest.

The Mutual Life Insurance Company of New York. ELEANOR S. BAGLEY

Recent Publications in Economic History

Compiled by MULFORD MARTIN

Abbey, Kathryn T. *Florida: Land of Change.* Chapel Hill: University of North Carolina Press, 1941. Pp. 426. $3.50.

Aldrich, Clara E. *The History of Banking in Idaho.* Boise: Idaho Bankers Association, 1940. Pp. 103. $3.50.

Allin, Bushrod W. *Historical Background of the United States Department of Agriculture.* Washington, D. C.: Bureau of Agricultural Economics, 1940. Pp. 16.

Ames, Susie M. *Studies of the Virginia Eastern Shore in the Seventeenth Century.* Richmond: Dietz Press, 1940. Pp. 274. $3.50.

Baldwin, Leland D. *The Keelboat Age on Western Waters.* Pittsburgh: University of Pittsburgh Press, 1941. Pp. 268. $3.00.

Barker, Preston W. *Charles Goodyear, Connecticut Yankee and Rubber Pioneer: A Biography.* Boston: Privately printed by Godfrey L. Cabot, Inc., 1940. Pp. 109.

Berman, A. Z. *Municipal Enterprise: Its History and Scope.* Cape Town: Juta and Company, 1940. Pp. 254. 12s. 6d.

Binns, Archie. *Northwest Gateway: the Story of the Port of Seattle.* New York: Doubleday, Doran, 1941. Pp. 313. $3.00.

Brand, Carl F. *British Labour's Rise to Power. Eight Studies.* [Hoover Library on War, Revolution, and Peace, Publication No. 17.] Stanford University: Stanford University Press, 1941. Pp. 305. $3.50.

Brodie, Bernard. *Sea Power in the Machine Age.* Princeton: Princeton University Press, 1941. Pp. 466. $3.75.

Brown, George W. *The Economic History of Liberia.* Washington, D. C.: Associated Publishers, 1941. Pp. 366. $3.00.

Bryant, Arthur. *Pageant of England, 1840-1940.* New York: Harper, 1941. Pp. 338. $3.50.

Bryant, Lyle C., and Jackson, Clarence A. *The Materials and Uses of Business History.* [Indiana Business Reports, No. 7.] Bloomington: School of Business, Indiana University, 1941. Pp. 19.

Burson, Caroline M. *The Stewardship of Don Esteban Miró, 1782-1792. A Study of Louisiana Based Largely on the Documents in New Orleans.* New Orleans: American Printing Company, 1940. Pp. 327. $3.00.

The Cambridge Economic History of Europe from the Decline of the Roman Empire. Volume I. *The Agrarian Life of the Middle Ages.* [Edited by J. H. Clapham and Eileen Power.] Cambridge: University Press; New York: Macmillan, 1941. Pp. 650. $7.50.

The Cambridge History of the British Empire. Volume II. *The Growth of the New Empire, 1783-1870.* [Edited by J. Holland Rose, A. P. Newton, and E. A. Benians.] Cambridge: University Press; New York: Macmillan, 1940. Pp. 1068. $10.50.

The Centennial of the Birth of Impartial Credit Reporting—An American Idea. New York: Dun and Bradstreet, Inc., 1941. Pp. 38. Gratis.

Chapman, Guy. *Culture and Survival.* London: Cape, 1940. Pp. 243. 8s. 6d.

Cleland, Robert G. *The Cattle on a Thousand Hills. Southern California, 1850-1870.* San Marino, Cal.: The Huntington Library, 1941. Pp. 327. $3.50.

Clough, Shepard B., and Cole, Charles W. *Economic History of Europe.* Boston: Heath, 1941. Pp. 841. $4.00.

Cole, Arthur H., and Williamson, Harold F. *The American Carpet Manufacture: a History and an Analysis.* [Harvard Economic Studies, Volume 70.] Cambridge: Harvard University Press, 1941. Pp. 281. $3.50.

Cole, G. D. H. *British Working Class Politics, 1832-1914.* London: Routledge, 1941. Pp. 320. 7s. 6d.

Compton, M., and Bott, E. H. *British Industry: Its Changing Structure in Peace and War.* London: Lindsay Drummond, 1940. Pp. 304. 15s.

Dalzell, George W. *The Flight From the Flag: the Continuing Effect of the Civil War Upon the American Carrying Trade.* Chapel Hill: University of North Carolina Press, 1940. Pp. 292. $3.50.

Demaree, Albert L. *The American Agricultural Press, 1819-1860.* [Columbia University Studies in the History of American Agriculture, Number 8.] New York: Columbia University Press, 1941. Pp. 430. $4.00.

Dick, Everett. *Vanguards of the Frontier. A Social History of the Northern Plains and Rocky Mountains from the Earliest White Contacts to the Coming of the Homemaker.* New York: Appleton-Century, 1941. Pp. 574. $5.00.

Diller, Robert. *Farm Ownership, Tenancy, and Land Use in a Nebraska Community.* Chicago: University of Chicago Press, 1941. Pp. 192. $2.00.

Dillon, John J. *Seven Decades of Milk: a History of New York's Dairy Industry.* New York: Orange Judd, 1941. Pp. 340. $3.00.

Du Bose, John W. *Alabama's Tragic Decade: Ten Years of Alabama, 1865-1874.* [Edited by James K. Greer.] Birmingham, Ala.: Webb Book Company, 1940. Pp. 435. $3.50.

Dunham, Harold H. *Government Handout: a Study in the Administration of the Public Lands, 1875-1891.* New York: The Author, 62 Allendale Road, Grasmere, S. I. Pp. 364. $2.00.

Edwards, Everett E. *American Agriculture: the First 300 Years.* [Yearbook Separate, No. 1730.] Washington, D. C.: Government Printing Office, 1941. Pp. 126.

Essays in Modern English History in Honor of Wilbur Cortez Abbott. Cambridge: Harvard University Press, 1941. Pp. 404. $3.50.

Eckard, E. W. *Economics of W. S. Jevons.* Washington: American Council on Public Affairs, 1940. Pp. 113. $2.00 (paper cover).

Faulkner, Harold U. *American Political and Social History.* [Second edition.] New York: Crofts, 1941. Pp. 804. $5.00.

Fitzpatrick, Brian. *The British Empire in Australia: an Economic History, 1834-1939.* Melbourne: Melbourne University Press, 1941. Pp. 529. $4.20.

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The editors of THE JOURNAL are happy to announce that the papers read at the First Annual Meeting of the Economic History Association will soon be published. The cost of printing and of mailing copies of these papers to all subscribers of THE JOURNAL has been underwritten by certain members of the Economic History Association. To these sponsors of the supplementary issue of THE JOURNAL the editors are deeply grateful.

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